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Private sector certification programmes and socio-ecological changes in the cocoa landscapes of Ghana: A political ecology study

THÈSE DE DOCTORAT

Présentée à la
Faculté des géosciences et de l'environnement,

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de l'Université de Lausanne par

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Sous la présidence du Prof. René Véron

LAUSANNE, 2021

Increase in cocoa tree yields under certification programme. (Picture by Isaac Addo, a fieldwork assistant, Kasapin, 2020)

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PRIVATE SECTOR CERTIFICATION PROGRAMMES AND SOCIO-ECOLOGICAL CHANGES IN THE COCOA LANDSCAPES OF GHANA: A POLITICAL ECOLOGY STUDY

Lausanne, le 14 décembre 2021

Pour le Doyen de la Faculté des géosciences et de l'environnement

Professeur René Véron

Abstract

Following global consumer demand for ethically and sustainably sourced natural resources and agricultural products, including cocoa, coffee, soybeans, tea, vanilla, etc., private-led governance arrangements such as certification programmes have emerged alongside state arrangements. In Ghana, private sector chocolate firms are operating parallel to the state, challenging decades of state-controlled cocoa sector. While this alternative market network enables chocolate firms to restore and maintain their market legitimacy in the global value chain, the influence of this new dynamic on local supply chain actors, the state's stronghold on the sector and the complex rural agrarian communities in Ghana remain unknown. For instance, although the certification programmes by chocolate firms tend to promote tree conservation in farmers' cocoa production systems, less is known about the potentials of the certification programmes to facilitate and achieve the cocoa agroforestry initiatives.

It is mostly argued that private firms are less capable to adequately operate in a state-controlled economy to effect some changes. Linked to this is the recent cocoa wars between the two-giant cocoa producing countries (i.e., Ghana and Cote d'Ivoire) and some chocolate firms, where the two countries are asserting political and economic control over firms' sustainable certification programmes. This contradicts the Polanyian idea that firms have the power to operate unregulated to change the local agrarian context even in a state-dominated economy. Through the lens of political ecology, my aim in this thesis is to evaluate the power relations between the state, private chocolate firms and smallholder farmers, and the extent to which those relations produce socio-environmental changes in rural cocoa communities of Ghana.

Based on case study approach in Asunafo-North cocoa region of Ghana, four conceptual or analytical tools (such as governance, access, social relations of production and the chain of explanation) are adopted to analyse field and secondary data and produce arguments. The analysis and arguments about the influence of state, private firm and smallholder power relations on socio-ecological transformation are centred around four major themes of the thesis.

The first theme focuses on the governance of a firm-led certification programme. Here, I analyse how a firm inserts its certification programme in a local context, as a result

shaping local agrarian institutional forms. The main findings are that firms co-opt local agrarian institutions at the initial stage, and then when the certification programme takes root, they tend to transform and displace local institutions and practises. This resonates with neo-Chayanovian proposition that peasants' encounter with capitalist or market systems does not mean a complete change of their attributes. Peasants maintain some of their agrarian institution. I argue that the maintenance of part of the agrarian institution is because of firm's capabilities (via certification programme) to grant peasants an institutional autonomy and reduce their dependency on the state. However, this has created new dependency relations between cocoa farmers and the chocolate firms.

The second theme analyses certification incentives as access mechanisms through which smallholder farmers obtain benefits. Using the notion of access, I categorise the incentives as access mechanisms or means and analyse the array of benefits associated with the incentives. I argue that the mobilisation of these incentives by private sector firms obfuscates the state's poor and unsuccessful relations with farmers. At the same time, the incentivisation mechanisms produce altered and uneven distribution of benefits, production and bureaucratic costs, market leakages, environmental theft, unjust gendered labour relations, enhanced labour workloads and exploitation. However, these bittersweet aspects of the certification programme operate within the realm of power relations between the state and private sector firms. To adequately curtail the burdens and maintain the benefits would require market and institutional reforms, and reconsideration of existing structural differences among farmers, and between the state and the market for better sustainable transitions.

The third theme focuses on smallholder's social relation of production in rural cocoa growing communities. I found and argue that while a firm governs the local agrarian context and facilitates smallholders' access to productive resources and benefits, certain unjust local realities (social practices and conditions) are left undiagnosed and untreated by the certification programme. These unjust relations and conditions cause dispossession of cocoa farm and produce winners and losers through processes such as outright sales of cocoa farms, labour contractualisations in sharecropping system and collateralisation of cocoa farms. I argue that the misrecognition of these local realities under the certification programme is because the firm focuses too much on improving crop productivity for continuous supply of cocoa beans. I suggest that to

achieve meaningful sustainability and more specifically social justice, the certification programmes should consider safeguarding the livelihood of farmers with respect to the protection of their property and labour rights.

The last theme analyses the potentials of a certification programme to transition farmers' production system from cocoa monoculture to cocoa agroforestry. Drawing on the chain of explanation, I show that farmers' conservation practises in cocoa farms are shaped by diverse local contextual factors, such as hybrid cocoa tree variety, continuous rehabilitation of cocoa farms, access rights in trees and labour relations, illegal logging, proliferation of small-scale sawmill and timber concessions policies of the Forestry Commission. The persistent influence of these drivers is as a result of certain historical (e.g., colonial establishment of timber industry) and ongoing political (e.g. state's reluctant to relinquish forest rights) and economic forces (e.g. Cocoa Rehabilitation Programme to sustain the supply chain). I argue that while the certification programme has the potential to promote cocoa agroforestry, these underlying drivers impede its progress and success. Farmers should not be blamed for the slow transition towards cocoa agroforestry system, rather the transformation process would be achieved by understanding and taking into account the historical and current social relations, political, economic and environmental dimensions of cocoa production systems.

The thesis concludes that as long as these contradictions about the certification programmes exist, there is nothing sustainable and ethical about the cocoa a firm source from smallholders through this alternative market network. Hence, it is imperative to scale up the benefits, eliminate the burdens and curtail the constraints that mar the "sustainability" aspect of the certification programmes.

Résumé

Suite à la demande mondiale des consommateurs pour des ressources naturelles et des produits agricoles éthiques et durables, y compris le cacao, le café, le soja, le thé, la vanille, etc., des dispositifs de gouvernance privés tels que les programmes de certification ont émergé parallèlement aux dispositifs étatiques. Au Ghana, les entreprises de chocolat du secteur privé opèrent parallèlement à l'État, remettant en cause des décennies de contrôle du secteur du cacao par l'État. Si ce réseau de marché alternatif permet aux entreprises de chocolat de restaurer et de maintenir leur légitimité sur la chaîne de valeur mondiale, l'influence de cette nouvelle dynamique sur les acteurs de la chaîne d'approvisionnement locale, la forte emprise de l'État sur le secteur et les communautés agraires rurales complexes du Ghana restent inconnues. Par exemple, bien que les programmes de certification des entreprises chocolatières tendent à promouvoir la conservation des arbres dans les systèmes de production de cacao des agriculteurs, on en sait moins sur le potentiel des programmes de certification pour faciliter et réaliser les initiatives d'agroforesterie du cacao.

Il est souvent avancé que les entreprises privées sont moins capables d'opérer de manière adéquate dans une économie contrôlée par l'Etat pour effectuer certains changements. Les récentes guerres du cacao entre les deux géants de la production de cacao (le Ghana et la Côte d'Ivoire) et certaines entreprises chocolatières y sont liées, les deux pays affirmant leur contrôle politique et économique sur les programmes de certification durable des entreprises. Cela contredit l'idée polanyienne selon laquelle les entreprises ont le pouvoir d'opérer de manière non réglementée pour changer le contexte agraire local, même dans une économie dominée par l'État. A travers le prisme de l'écologie politique, mon objectif dans cette thèse est d'évaluer les relations de pouvoir entre l'Etat, les entreprises privées de chocolat et les petits exploitants agricoles, et la mesure dans laquelle ces relations produisent des changements socio-environnementaux dans les communautés rurales de cacao du Ghana.

Sur la base d'une approche par étude de cas dans la région cacaoyère d'Asunafo-Nord du Ghana, quatre outils conceptuels ou analytiques (tels que la gouvernance, l'accès, les relations sociales de production et la chaîne d'explication) sont adoptés pour

analyser les données de terrain et secondaires et produire des arguments. L'analyse et les arguments concernant l'influence des relations de pouvoir entre l'Etat, les entreprises privées et les petits exploitants sur la transformation socio-écologique s'articulent autour de quatre thèmes majeurs de la thèse.

Le premier thème se concentre sur la gouvernance d'un programme de certification dirigé par une entreprise. J'analyse ici la manière dont une entreprise insère son programme de certification dans un contexte local, en façonnant par conséquent les formes institutionnelles agraires locales. Les principales conclusions sont que les entreprises cooptent les institutions agraires locales au stade initial, puis, lorsque le programme de certification prend racine, elles ont tendance à transformer et à déplacer les institutions et les pratiques locales. Cela correspond à la proposition néo-chayanovienne selon laquelle la rencontre des paysans avec les systèmes capitalistes ou de marché ne signifie pas un changement complet de leurs attributs. Les paysans conservent une partie de leurs institutions agraires. Je soutiens que le maintien d'une partie des institutions agraires est dû à la capacité de l'entreprise (via le programme de certification) à accorder aux paysans une autonomie institutionnelle et à réduire leur dépendance vis-à-vis de l'État. Cependant, cela a créé de nouvelles relations de dépendance entre les producteurs de cacao et les entreprises chocolatières.

Le deuxième thème analyse les incitations à la certification en tant que mécanismes d'accès par lesquels les petits exploitants agricoles obtiennent des avantages. En utilisant la notion d'accès, je catégorise les incitations comme des mécanismes ou des moyens d'accès et j'analyse l'éventail des avantages associés aux incitations. Je soutiens que la mobilisation de ces incitations par les entreprises du secteur privé masque les relations médiocres et infructueuses de l'État avec les agriculteurs. En même temps, les mécanismes d'incitation produisent une distribution altérée et inégale des bénéfices, des coûts de production et de bureaucratie, des fuites du marché, des vols environnementaux, des relations de travail injustes entre les sexes, une charge de travail accrue et l'exploitation. Toutefois, ces aspects aigres-doux du programme de certification s'inscrivent dans le cadre des relations de pouvoir entre l'État et les entreprises du secteur privé. Pour réduire les charges et maintenir les avantages, il faudrait réformer le marché et les institutions, et reconsidérer les différences structurelles existantes entre les agriculteurs, et entre l'État et le marché pour des transitions plus durables.

Le troisième thème se concentre sur les relations sociales de production des petits exploitants dans les communautés rurales productrices de cacao. J'ai constaté et je soutiens que si une entreprise régit le contexte agraire local et facilite l'accès des petits exploitants aux ressources productives et aux bénéfices, certaines réalités locales injustes (pratiques et conditions sociales) sont non diagnostiqués et non traités par le programme de certification. Ces relations et conditions injustes entraînent la dépossession des exploitations cacaoyères et produisent des gagnants et des perdants à travers des processus tels que la vente pure et simple des exploitations cacaoyères, la contractualisation du travail dans le système de métayage et la mise en garantie des exploitations cacaoyères. Je soutiens que la méconnaissance de ces réalités locales dans le cadre du programme de certification est due au fait que l'entreprise se concentre trop sur l'amélioration de la productivité des cultures pour un approvisionnement continu en fèves de cacao. Je suggère que pour atteindre une durabilité significative et plus spécifiquement la justice sociale, les programmes de certification devraient envisager de sauvegarder les moyens de subsistance des agriculteurs en ce qui concerne la protection de leurs droits de propriété et de travail.

Le dernier thème analyse le potentiel d'un programme de certification pour faire passer le système de production des agriculteurs de la monoculture du cacao à l'agroforesterie du cacao. En m'appuyant sur la chaîne d'explication, je montre que les pratiques de conservation des agriculteurs dans les cacaoyères sont façonnées par divers facteurs contextuels locaux, tels que la variété de cacaoyer hybride, la réhabilitation continue des cacaoyères, les droits d'accès aux arbres et les relations de travail, l'exploitation forestière illégale, la prolifération des scieries à petite échelle et les politiques de concessions forestières de la Commission forestière. L'influence persistante de ces facteurs est le résultat de certaines forces historiques (par exemple, l'établissement colonial de l'industrie du bois) et politiques (par exemple, la réticence de l'État à renoncer aux droits forestiers) et économiques (par exemple, le programme de réhabilitation du cacao pour soutenir la chaîne d'approvisionnement). Je soutiens que si le programme de certification a le potentiel de promouvoir l'agroforesterie dans le cacao, ces facteurs sous-jacents entravent sa progression et son succès. Les agriculteurs ne doivent pas être blâmés pour la lenteur de la transition vers le système agroforestier du cacao. Au contraire, le processus de transformation serait réalisé en comprenant et

en prenant en compte les relations sociales historiques et actuelles, les dimensions politiques, économiques et environnementales des systèmes de production du cacao.

La thèse conclut que tant que ces contradictions concernant les programmes de certification existent, il n'y a rien de durable et d'éthique dans le cacao qu'une entreprise s'approvisionne auprès des petits exploitants par le biais de ce réseau de marché alternatif. Par conséquent, il est impératif d'augmenter les avantages, d'éliminer les charges et de réduire les contraintes qui entachent l'aspect "durabilité" des programmes de certification.

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List of Abbreviations

COCOBOD	Ghana Cocoa Board
CRIG	Cocoa Research Institute of Ghana
CHED	Cocoa Health and Extension Division
SPD	Seed and Production Unit
CMC	Cocoa Marketing Company
QCC	Quality Control Company
GAP	Good Agricultural Practise

List of non-English terms (TWI)

Abunu	sharing of cocoa produce in equal halves between the farm owner and caretaker
Abusa	produce sharing arrangement where the farm owner takes two-third, and the caretaker takes one-third
Awowa	mortgage or lease of cocoa fields or lands

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Dedication

To the migrant cocoa farmer who brought me to this world and educated me. Dad, rest in peace.

Glory be to God.

The smallholder: our ethical cocoa, our revenue, our profit and our chocolate.
Picture by the Author, 2018

Chapter One: General Introduction

1.0. Introduction

Ghana is the second largest cocoa producer in the world with its production mainly undertaken by smallholder farmers. Two main trends have confronted the cocoa sector over the past decades. The first is the gloomy transition that relates to the sustainability challenges in the cocoa production sector such as forest degradation and deforestation, low productivity, declining soil fertility, poor farming practices, poverty, poor working conditions, child labour, low farm gate prices and climate change (Nelson & Phillips, 2018). These challenges continue to confront smallholder production systems because they are inadequately controlled and ameliorated by the state.

The second trend is the deployment of the numerous private sector certification schemes and sustainability initiatives for the management of the aforementioned supply chain problems. Most of these supply chain sustainability management strategies have a long-term focus on yield growth, raising farmers' income, environmental conservation, and the supply of certified or ethical cocoa beans produced under environmentally-sound agricultural practices and standards for the chocolate economy (Fountain & Huetz-Adams, 2018; Laven & Boomsma, 2012; Ton et al., 2008).

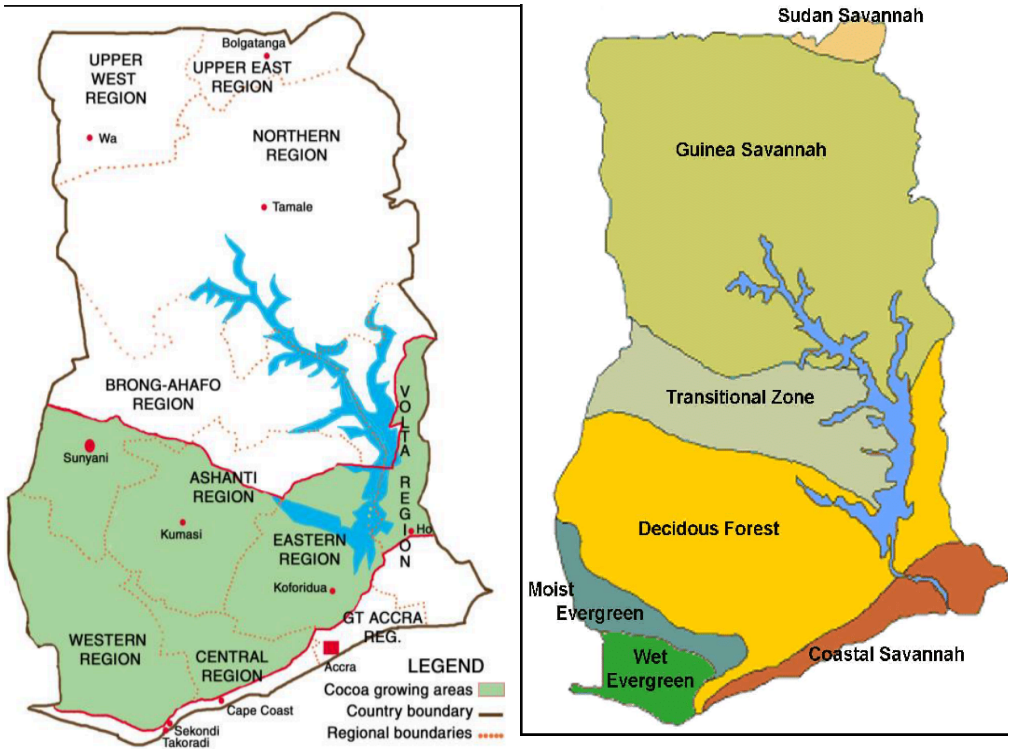
The focus of this thesis is to understand how a private sector certification programme led by a chocolate firm is embedded and operated in a rural cocoa producing region of Ghana, and the extent to which it is producing socio-economic and environmental transformations for smallholder farmers. I begin the thesis with this chapter to set the background and introduce the core thrust of the thesis by first providing some brief overview of how commercial cocoa farming originally started in Ghana. The historical narratives encompass how smallholder farmers mobilised and organised resources such as labour, financial capital and social capital to appropriate fertile forestlands for the cultivation of cocoa for the external market. I then proceed to introduce and critically problematise some key features of the Ghanaian cocoa sector. Here, I start with the institutional context of the Ghanaian cocoa sector. I continue to introduce the scope and the forms of certification programmes that characterise the cocoa sector.

After this, I explain the cocoa supply chain sustainability challenges which the certification programmes are designed to address. I follow this with the aims and the objectives, the key motivations, main argument and the synopsis of the research findings. I also justify why a study on certification programmes for the sustainability transition in the cocoa sector of Ghana is relevant. Subsequently, I describe the study sites and how the various research methods were employed to undertake the study. Then, finally I outline the structure of this thesis.

1.1. The history of commercial cocoa farming in Ghana

Cocoa in Ghana is grown in the southern tropical humid region (Figure 1). How cocoa was introduced to the colonial Ghana, Gold Coast, remains a point of contention. But Tetteh Quarshie is popularly known as the first to introduce cocoa in Ghana. He returned to Gold Coast with Amelonado cocoa seeds from Spanish colonial island of Fernando Po, (currently Bioko of Equatorial Guinea) in 1879 and planted them in Akwapim Mampon in the Eastern region. However, there are assertions that colonial traders and missionaries such as the Dutch, the Basel Mission and the British started agricultural experimentations of cocoa farming before the 1850s, but they were unsuccessful (Hill, 1963) (see Box Two below for some reason).

Access to cocoa seedlings, seeds, some techniques of growing the new crop and local collaboration facilitated the initial planting and expansion of cocoa farming in the 1880s (Hill, 1959, 1961; Hunter, 1963). For example, Sir William Brandford Griffith, the then colonial governor supported the planting of cocoa seedlings at Aburi Botanical Garden—about 30 km north of Accra, the current capital city of Ghana—and promoted its distribution to farmers through the chiefs and the Basel missionaries (Amoah, 1995).



(a) (b)

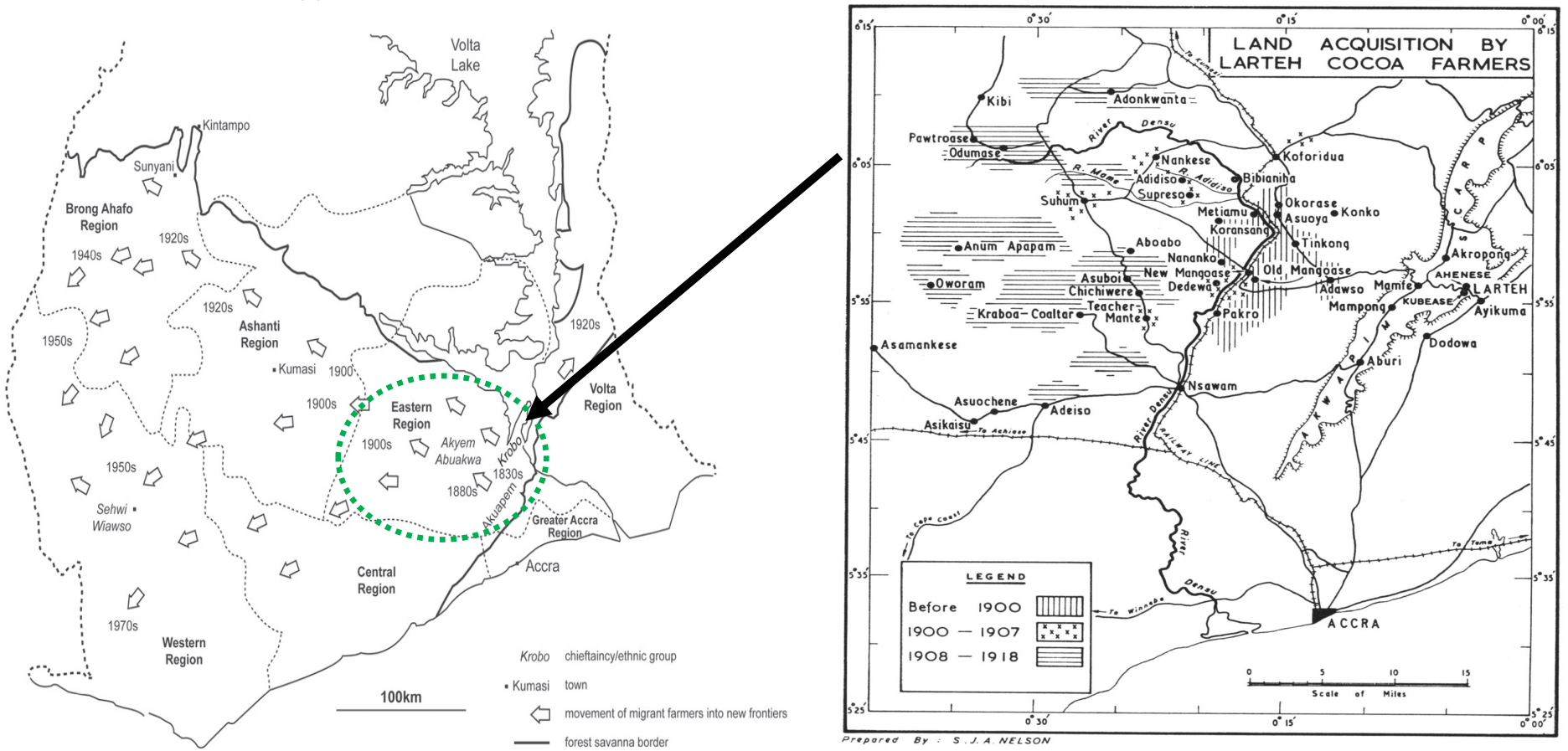
Source of the map: (Asare, 2016)

Figure 1: Cocoa growing areas (a) and agro-ecological zones of Ghana (b)

BOX ONE

Brief note on Figure 1

The first map corresponds with the previous administrative regions of Ghana and does not follow the new administrative regions (where additional six regions had been created).The map represents the distribution of cocoa production concentrated in the forest ecotone of the Southern part of Ghana (compared with the second map) where annual rainfall may be between 1500-2000mm and daily temperature may average between 25-31°C. Cocoa cultivation is significantly restricted to these ecological regions which are devoid of strong winds, usually up to 600 meters above sea level, with well drained soils, and experiencing reasonable heat and moisture throughout the year (Clarence-Smith and Ruf 1996). It should be noted that the cocoa landscape (Map A) is embedded in a larger mosaic landscape and does not mean that all the lands in each region are virtually covered with cocoa trees.



Source: (Adapted from Amanor, 2010 and Hill, 1959).

Figure 2: The cocoa frontier development in the southern forest zone of Ghana

The people known as the Akwapim Larteh were the earliest pioneers to start cocoa farming around Akwapim Ridge, 30 kilometres north of Accra where the new tree crop was first introduced and experimented (Figure 2). These early cocoa pioneers were previously both producers and traders of food crops and oil palm products. Cocoa became an important commercial crop following the introduction of petroleum as a lubricant in the world market in the 1880s which caused the export price of oil palm to fall drastically compared to cocoa (Wilson, 1990). These farmers also realised that European merchants were willing to buy cocoa beans at a better price (Berry, 2018).

The new tree crop needed fertile forest lands for growth, survival and expansion. So, the Akwapim Larteh people first began to migrate from their original lands to the neighbouring lands of the Akim tribe in search of forestlands to farm cocoa. The Krobo tribe later joined the race for land from their native homeland in the south-eastern coastal belt or the Accra plains. Migration in search of lands by these two tribes was necessary because the already overcrowded "Akwapim Ridge was too narrow and steep sided and the Accra Plains was dry and infertile" to facilitate cocoa cultivation and expansion (Hill, 1961, 1963; Hunter, 1963, p. 62).

The farmers started their first commercial cocoa farming in the 1880s in a town called Adawso (Hill, 1959) (see Map B in Figure 2). They used their savings from the oil palm production to buy forestlands from the Akim chiefs. The farmers also obtained loans from their rich fellow farmers to buy lands. In some cases, these loans were exchanged for children as helpers or handmaids. The Akim chiefs were willing to sell their customary or stool forestland to the migrant farmers, because by that time their two main sources of income had declined: the slave trade was prohibited and gold mining sector were largely controlled by foreign companies (Sarbah, 1904; Wilson, 1990). As a result of the colonial rail transport development and construction of river bridges and roads, Mangoase, Tinkong and Asuoya also became important commercial growing villages by these strangers in the 1900s (Hill, 1959). These important earlier commercial growing centres served as an impetus for more subsequent widespread colonisation of large lands through outright purchase. This is because the profitable returns in cocoa farming were used to acquire additional lands (Hill, 1959). The intention of the migrants to appropriate lands for cocoa farming was motivated by the need to strengthen the resource base of their family members where established cocoa

fields and acquired lands were inherited by the next successive members (Amanor, 2010).

The farmers migrated either as a family or as a company. The migratory group of families for new lands consisted of members of the patrilineal family system such as the father, the sons, or brothers alone or related cousins. The newly acquired lands were planted with cocoa and the head of the family or the prime owner of the land would distribute proportions of the matured cocoa farms to members of the family or sons for their contributions (Hill, 1961). In some cases, the forestlands were distributed to the members of the family to cultivate the cocoa themselves (Hill, 1961).

The migration by company was the most popular means of land acquisition. It was known as *huza* system. This involved homogenous groups of extended family relatives or citizens of a hometown who migrated to purchase forestlands for cocoa cultivation. Some companies could also be a heterogeneous group of migrants formed at a destination (Field, 1943; Wilson, 1990). The size of the company may range from 4 to 100 members. It was particularly associated with Krobo people and was very instrumental for the appropriation of land for cocoa farming such that Margreth Field described it as the "bloodless conquest" of land (Field, 1943, p. 54).

The company had a leader who negotiated and bought the land on behalf of the members from the chiefs. This single leadership negotiation system was mostly preferred by the chiefs. Payments may either be made in full or instalment basis. The acquired lands were shared in a strip form with the width of the strips corresponding to each member's financial contribution to the fund. There was no joint farming. Members cultivated the lands individually with cocoa trees. Each corporate farmer settled on the land and farmed around his settlement for the security of the cocoa farms and for the land. Whether the new lands were filled with cocoa trees or not, the farmers would be looking forward for the next available forestlands to conquer. Usually, earnings from the first cultivated lands were used for this purpose. Some even bought lands they had not seen (Field, 1943; Hill, 1959, 1961; Wilson, 1990). Old cocoa farms were left either for labourers, wives and sons to take care of and the original absentee farmer returned intermittently to monitor the condition of the farms (Hunter, 1963).

The chiefs also offered lands to some migrant groups as tenants for sharecropping. The tenants were responsible for clearing the land, nurturing the cocoa plants, managing the farms and financing the production cost. Later, the matured farm would be divided either into two or three and the tenant received a half or two-third share of the cocoa plantation while the landowner received a half (*abunu*) or third (*abusa*) (Robertson 1982; Amanor, 2001).

On one hand, the movement by the cocoa farmers for the acquisition of nearby available lands was observed to be in "spiral pattern" (Hill, 1959, p. 28). On the other hand, Hunter (1963, 64) described it as "leapfrog technique of migration" for land acquisition as farmers endless search for new lands took them to different locations westwards. Both spiral and leaf frog migratory patterns enabled migrant farmers to own multiple farms in different locations. Few Akim people owned multiple cocoa farms but they were not motivated to migrate. It is noteworthy to mention that not all the migrants were farmers. Some were labourers, aspirant farmers and traders. Other ethnic groups such as the Shai, Ewe and Ga were attracted by the cocoa boom in the Eastern County and subsequently followed (Hill 1959; 1961; 1963; Amanor, 1994). The migration and farming activities were very rapid and massive such that after 1900s, Ghana emerged as the world's largest producer of cocoa of which the two thirds of Ghana's cocoa was produced in this earlier frontier of the Eastern region (Hill, 1959; Hunter, 1963).

By the 1900s, the success in the survival of cocoa plants stimulated the colonisation of the next available vacant forestlands in Akim Abuakwa of the Eastern Region. At this period, the transport networks (roads and rails) had widened, and world cocoa prices had remained highly stable. The farmers had travelled further to the Volta, then part of Togoland (Buem-Krachi) (Hill, 1959, 1961, 1963; Amanor, 1994, 2010). Additionally, land prospecting, negotiation and acquisition for cocoa was beginning to take effect in the Ashanti region between the 1900s and 1920s. But the chiefs in Ashanti though attracted to the cocoa boom were not willing to sell their lands to strangers. Labourers, handmaids and slaves cultivated cocoa on stools lands for the chiefs (Hill, 1959, 1961, 1963; Amanor, 1994, 2010). The Asantes also gave out stool lands for sharecropping. It was akin to the Akim chiefs' *abusa* and *abunu* sharecropping system. In some cases, the Asantes hired tenants as caretakers to manage farms and the proceeds in terms of the amount of cocoa bags were shared where the caretaker obtained either half or a

third of the proceeds (Robertson 1982; Amanor, 2001). This attracted migrants from the northern ethnic tribe of Mossi, Musanga, Zabrama, Wangara and Frafra to Ashanti region as caretakers, labourers and aspirant farmers, who eventually got cocoa farms through the sharecropping system (Hill, 1963; Hunter, 1963; Austin, 1987; Amanor, 2001; Austin, 2005).

Around 1914 and 1920, the Ahafo region (the south-western part of Brong-Ahafo region in Figures 1 and 2) began to experience the advent of cocoa. Before the introduction of cocoa in Ahafo, residents were trading in gold dust, rubber, kola nuts and snails with other regional communities. However, it was the rubber economy that facilitated the early development of cocoa farming in the region. This is because the constant search and tapping of the rubber enabled exploration of lands for cocoa production. Also the head-loading of rubber to trading centres allowed for the spread of cocoa seedlings and seeds to the region (Bray 1959). Profits in rubber trade also served as initial investment package for cocoa production. In Ahafo, forestlands for cocoa were not bought but could only be rented. This was a replication of Asante's land renting system. By the 1940s, the Ahafo cocoa belt became an extension of the Ashanti cocoa belt. It was occupied by the Ashanti cocoa farmers when land became scarce for cocoa in the Ashanti region (Amanor, 1994).

Between the 1940s and 1950s, cocoa farms and productivity in the old frontiers of the Eastern region began to decline fast. They were seriously attacked by pest, the swollen shoot virus disease and weeds. The ageing cocoa trees and declining soil fertility contributed to a falling output (Amanor, 2005; Hill 1963). This devastating situation in the old cocoa growing areas further influenced migration and opening up of new frontiers in Ahafo region (Bray 1959; Amanor, 2005). Despite the declining yields and moribund cocoa farms in the old frontiers of the Eastern region, Ghana still experienced significant boom in cocoa output as a result of migrant farmers' land acquisition practises in the new frontiers of the Western region between the 1950s and 1960s. Conservationists were worried about the opening up of the new frontiers in the Western region (Hill, 1959). The availability of fertile forestlands in the Western region and high cost of rehabilitating the moribund cocoa farms were respectively the pull and the push factors.

However, Ghana cocoa production stagnated between the 1960s and 1970s (Amanor, 2005). Cocoa farmers in Ghana were ageing and labourers were becoming scarce. Farmers were unable to hire labourers and buy agronomic inputs to stay in cocoa production (Amanor, 2005). The government of Ghana in 1970 worsened the crisis by appropriating a larger percentage of producer price. This pushed some farmers into food crop production because the prices of food crops in urban markets were higher than cocoa. Impoverished and unsuccessful farmers in old frontiers were forced to migrate to new frontiers as labourers and sharecroppers for large landholders (Amanor, 1994). But their expectations were not met as many could not access land, became debtors and formed a pool of landless labour for large landholders (Arhin, 1985).

The development of cocoa in both new and old frontiers was smallholder driven. Its emergence was, of course, associated with complex social relation of production, diverse forms of tenureship regimes, and processes of social differentiation. It led to the emergence of landless labour, large landlords, absentee landowners with multiple farm holdings and complex family ownership regimes which has reduced original cocoa farms into smaller units, and as a result created marginal profits unsustainable to live on (Amanor, 1994).

Despite the production challenges, the cocoa sector is still an important source of livelihood for smallholders and revenue for the state. Together with Cote d'Ivoire, Ghana produces and exports over 60 percent of global cocoa beans. Hence, Ghana is a very significant actor in the global cocoa value chain. Unlike other producing countries, Ghana's cocoa sector is constituted by the state's institutional system. But in recent times, there has been new institutional development as a result of the private sector certification programmes. In the next section, I begin to problematise the context of this thesis by first introducing this new institutional dynamic in the cocoa sector. I show how the cocoa sector in Ghana is governed by state institutions and the private sector through certification programmes. I also explain the current sustainability challenges in the cocoa sector and how they are connected with certification programme. This enables me to set the purpose for the research thesis.

BOX TWO

Additional notes on the history of cocoa farming in Ghana

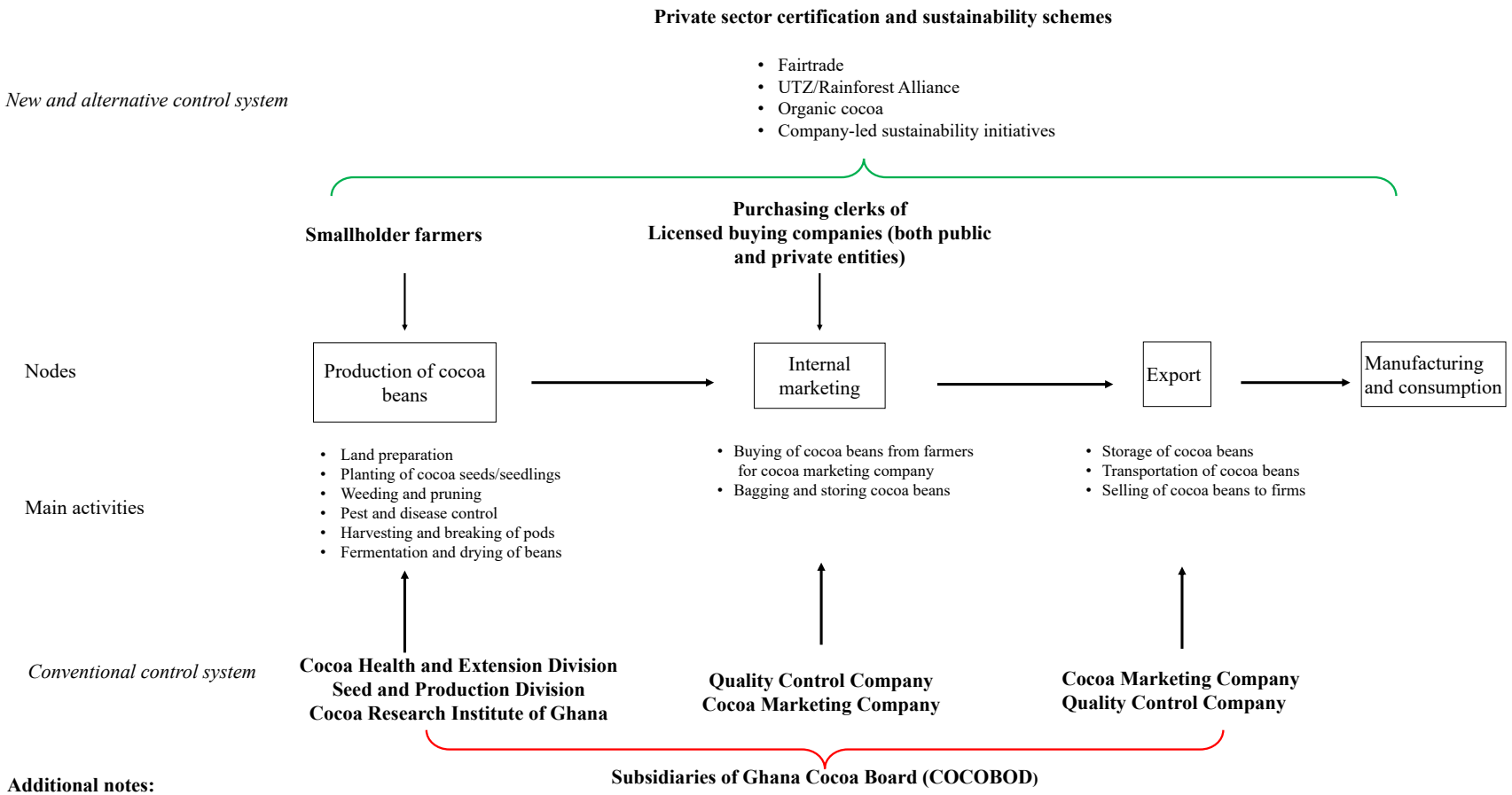
It worth noting here that the initial development and expansion of cocoa farming in Ghana was mainly due to the economic rationality and entrepreneurship of native Ghanaian farmers (Austin, 1996; Hill, 1963; Richards, 1983). But, European cocoa planters and company plantations existed during the boom period within the southern Ghana between 1900-36 (Dickson, 1969). For instance, 150 acres of cocoa plantation were planted by the merchants Alexander Miller Brothers in the Central Province of the Gold Coast Colony and the Scottish Cooperative Wholesale Society owned 25,000-tree plantation in the Eastern Province. A trading company, Lever Brothers, instituted large cocoa plantation at Bunso in the Eastern Province in 1926. And Cadbury also had model estate farms while the Germans had model plantain at Kpeve (Austin, 1996, p. 157).

However, European cocoa planters failed to compete with Ghanaian cocoa farmers (Austin, 1996). This was because of their high expenditure on wage labour for cocoa farm management and post-harvest activities. Such high cost of production was not economically viable for cocoa production continuation and expansion. On the other hand, Ghanaian farmers were cultivating farms themselves, and in some cases used family labour, slaves and pawns (Austin, 1987). They only used hired labour when cocoa trees have matured to fruit and returns on it were used to pay labourers (Hill, 1963). Labour cost therefore placed native farmers in an economically competitive position.

Moreover, unlike the Ghanaian farmers who were employing land use extensive methods, European cocoa planters continuously relied on intensive methods of cultivation such as “regular planting, heavy weeding and maintenance, mechanised drying”—which were also actively encouraged by the colonial Department of Agriculture (Green & Hymer, 1966, p. 310). For example, the wide spacing planting method of Amelonado cocoa trees by the European planters led to low yields. Again, the same method required an intensive weeding in cocoa fields. On the contrary, Ghanaian cocoa farmers adopted the dense planting or close spacing method which was of substantial benefits. The dense planting facilitated the early development of canopies that prevented weed infestations and hence no labour cost on weeding. This enabled them to obtain much better proceeds and profits (Austin 1996; Tudhope 1909). This approach also had its downside. The dense planting method and the associated closed canopy development mostly bred black pod disease, however, capsid attack was a rather major threat to cocoa at that time (Austin, 1996). Moreover, while the Department of Agriculture advocated for the removal and burning or burying of capsid attacked pods—a practice mostly adopted by the European planters, Ghanaian farmers adopted the Weed Overgrown technique as the “universal native practice” (Tudhope 1918, 14) . This technique was described by a Ghanaian cocoa farmer as:

“When a cocoa-farm is partly attacked by 'Akate' [capsid], the farmer leaves that portion infected uncleared; left to wild plants, weeds, and climbing stems to overgrow that portion for three years good. The farmer will inspect period by period, and in due course, he will find that the infected area had entirely changed, and had become fresh and flourishing trees with fine dark and long leaves appear. The farmer would then engage labourers to clear out the wild weeds and plants; he will find that, that method had proved successful: the trees turned out to be new, and healthy” (PRO, 1948).

This suggests that labour cost and cultivation practices enabled Ghanaian smallholder cocoa farmers to expand and dominate production at a time when land was abundant. The existence of the Concessions Ordinance of 1900 and 1903 specified the access limit of European planters to acquire land up to maximum of 20 square miles. However, some companies avoided the land acquisition limit by obtaining and registering a number of lands under different names and used them (Howard & Howard-Hassmann, 1978; Phillips, 1989). Despite this, they were unsuccessful in production because they refused to adopt land extensive approach which was the most suitable mode of cocoa cultivation to the economic and ecological setting (Austin, 1996). Hence, the adoption of native agricultural system by Ghanaian farmers led to development of cocoa commercialization both in the old and new frontier zones of Ghana.



Additional notes:
Ghana Cocoa Board draws on Cocoa Health and Extension Division (CHED) to provide agronomic advisory services and facilitate the state's sustainability programmes. Its Seed and Production Division (SPD) raises hybrid or new cocoa seedlings to be distributed by CHED. Agronomic research and innovations, and standardisation of agrochemicals, inputs and techniques of production are under the jurisdiction of the board's Cocoa Research Institute of Ghana (CRIG). The Board uses Quality Control Company (QCC) to standardise cocoa beans according to the market preferences both at the farm gate and at the internal and external trading point. The Cocoa Marketing Company (CMC) issues license to licenced buying companies and grant them funds to buy cocoa beans from farmers for the CMC. The CMC also sells cocoa beans both internally and externally to processing companies and chocolate firms. The marketing node of the supply chain was wholly controlled by CMC. However, through the influence of the World Bank in the 1990s, the cocoa board has partially liberalised its marketing sector which now enables private licensed buying companies to buy cocoa beans directly from farmers (Glin et al., 2015).

Figure 3: Ghana's cocoa supply chain and its control or regulatory system

1.2. Institutional context and certification programmes in Ghana

Since the emergence of cocoa as a commercial crop, the cocoa sector of Ghana has undergone various forms of economic and institutional governance changes. In the colonial period, the sector was under the free market system involving direct market and trading relations between farmers and European buyers such as United Africa Company and Cadbury (Ton et al., 2008). However, in the 1930s, the British colonial administrators started to regulate the sector (Alence, 1990). In 1947, the British colonial government instituted the Cocoa Marketing Board to oversee the activities of the sector. This institutional establishment was the government's response to a cocoa strike by smallholder farmers who agitated against the buyers for better market prices for their produce between the 1937 and 1938 (Alence, 1990).

Post-colonial governments since 1957 to date control the sector through the same state institution, now Ghana Cocoa Board. The board controls and regulates the production, distribution and trading of cocoa beans in Ghana (Figure 3). While Ghana's cocoa production segment is still dominated by smallholder farmers numbering up to about 800,000, the state's parastatal owns and operates a few farm plantations and model farms for research and innovation purposes (Interview with an Official of Ghana Cocoa Board, 2019). The cocoa board had strengthened its autonomy and monopoly over the supply chain of cocoa beans by creating new and expanding already existing subsidiaries at the various production and trading points of Ghana's cocoa beans.

The cocoa sector is one of the main significant revenue generating economic activity to the Ghanaian economy with firms in Europe and America being the main importers (Seini, 2002). For instance, in 2015, Ghana's total cocoa output of 740 000 metric tonnes earned a total export revenue of $2,764 million (Abbadi et al., 2019). As a result, every successive government seeks to secure the significant revenue flow from the sector through various forms of institutional market reforms and sustainable production intervention programmes (Kolavalli & Vigneri, 2011) such as Youth in Cocoa programme, Cocoa Rehabilitation and Replanting programme, Mass spraying programme, Free delivery of fertiliser programme, etc. (Löwe, 2017).

1.2.1. Scope and forms of private sector certification programme

Operating alongside the state's control and intervention programmes since the 2000s are various market-based private sector driven certification schemes, multi-stakeholder and company-led sustainability initiatives such as Fairtrade, UTZ/Rainforest Alliance, Organic cocoa, Cocoa Life, Cocoa Horizon, Cocoa & Forest initiatives (Ton et al., 2008) (Figure 3). These initiatives and certification programmes are new market governance networks alternative to the conventional ones controlled by state institutions (Goodman et al., 2012; Jaffee, 2007).

Certification programmes are considered as "codes of conduct, production guidelines, and monitoring standards that govern and attest to not only the corporations' behaviour but also to that of their suppliers around the world" (Gereffi et al., 2001, p. 56). Thus, certification consists of set of rules, principles or guidelines and monitoring and reporting mechanisms (Gereffi et al., 2001). These rule systems are generally regarded as standards—the measures by which people, practices, and products are judged (Busch & Bingen, 2006; Loconto & Busch, 2010). Certification could be in the form of first-party, second-party, third-party and fourth-party certification[1]. These forms of certification embody varied governing authority to process the compliance of certifying standards, accrediting the certifiers and providing sanctions for non-compliance[2] (Loconto & Busch, 2010). Certification is considered as new model of corporate governance, which is significantly great for corporate bodies, especially when states' governance structures are less capable to constrain these powerful corporations (Loconto & Busch, 2010). It is also regarded as part of the corporate social

[1] First-party certification is where a firm develops standards and reports on compliance. Second-party certification is where an industry or trade association operates the adoption and compliance of set of rules or standards. Third-party certification is when a firm operates with an external group or entity. This external entity sets the rules, monitors and reports on suppliers' compliance. And Fourth-party certification is where government or multilateral agencies outline certain standards and rules for example United Nation's Global Compact for companies to follow and adhered to, which then set the basis for NGOs to examine the compliance reports of companies (Gereffi et al., 2001; Perreault et al., 2015).

[2] Certification institutional structure composes of *standard boards* who set the rules, norm and standards to govern the production and supply of good and services; *commodity producers* who receive and adopt the rule systems from the standard boards; and *certifying agencies* that monitor and report the compliance of the standards (Perreault et al., 2015).

responsibility strategy to pursue the global project of neoliberalism although through less coercive means such as standards, audits and protocols (Blowfield & Dolan, 2008).

However, there are concerns regarding that states relying on certification to address corporate accountability. Corporate certification arrangements compete for legitimacy with NGOs, consumers as well as for adoption by multinationals (Gereffi et al., 2001). In many instances, there are tensions and power struggles between standard bodies, national accreditation boards or state standard agencies, firms operating certification programmes and other actors or stakeholders (Ponte, 2019a). Tensions are driven by divergent interests, struggles for gains and the perceived mistrust in the global market economy. For example, Loconto & Busch (2010) document how and why Standard Development Organisations and National Accreditations Boards could intermediate to shape standard settings, accreditation and certification. And the power they exercise reflect their interest and values (Busch and Bingen, 2006). Moreover, alliance building or collaborations between firms and certifying bodies in the operations of firm-led certification programme could change (Krauss & Barrientos, 2021). A case in point is where Mondelez International has gradually stopped working with Fairtrade International in certifying the cocoa production landscape in Ghana. Currently, the company is operating their own brand of certification programme called Cocoa Life Program. This case of Mondelez Certification Programme needs further explanation, and it will be a focus of this thesis.

The certification programmes as new and alternative market intervention programmes by the private actors are driven by ethical concerns raised by politicians, the mass media, consumers, social movements, civil society groups, conservationists, etc. regarding persistent unsustainable socio-economic and environmental challenges at the supply chain (Gereffi et al-, 2001; Jaffee, 2007; Grabs & Ponte, 2019; Krauss & Barrientos, 2021). I elaborate below the ethical issues that pertain to the cocoa sector especially in the two giant West African producing countries, Ghana and Cote d'Ivoire.

1.2.2. Cocoa supply chain sustainability challenges

The first specific ethical issue about cocoa farming in Ghana and other producing countries is poverty which had been very pervasive as farmers continue to receive lower producer price fixed by the state. As of 2017, the per capita daily income of cocoa

farmers was approximately $0.40-$0.45[3], which amounts to an annual net income of $983.12-$2,627.81 and accounts for two thirds of cocoa farmers' household income[4]. According to the executive director of the International Cocoa Organisation (ICCO), cocoa farmers can earn $200 per month if they produce one metric tonne of cocoa per year. This amount is still far below the poverty line if household size ranges between 5 and 8 (Nieburg, 2019).

The second sustainability concern relates to the incidence of child and forced labour (Adonteng-Kissi, 2020; Amanor, 2011; Boas & Huser, 2006; Abenyega & Gockowski, 2003). It is indicated that about 2.1 million children work in cocoa farms in West Africa (Jha & Bassompierre, 2020; Fountain & Huetz-Adams, 2018) with about 1.56 million children working in the cocoa sector of Ghana and Cote d'Ivoire (Chandrasekhar, 2021). The cases of child labour have even intensified during the COVID-19 pandemic period (Bassompierre, 2020). This endemic nature of child labour is attributed to the governance gap at the supply chain in addition to the context-based social-cultural and economic factors (Crane et al., 2019). Moreover, scholars investigating Global value chains (GVC) or Global commodity chains (GCC) have stressed the need to pay attention to the importance of gender relations at the supply chain (Barrientos, 2019, 2014a, 2014b; Barrientos et al., 2013; Barrientos, 2013; Dunaway, 2013) because the business models of the cocoa supply chain cause severe labour exploitations and gender inequality (LeBaron & Gore, 2020).

In addition to the aforementioned social justice issues are environmental ethical concerns such as continuous deforestation in and around cocoa farms that endangers the natural ecosystems. Environmental NGO, Mighty Earth for instance, has reported on the "dark secret" of the chocolate industry "behind the wrapper" regarding persistent deforestation in West Africa particularly in Ghana and Cote d'Ivoire (Higonnet et al., 2017, 2018). Linked to this is a report by Global Forest Watch in 2018 which confirms that Ghana is losing its forest cover faster than any country in the world, mainly due to cocoa farming (Asiedu, 2019). Driving cocoa deforestation is poverty, lack of inputs, inadequate access to agronomic services, techniques, poor soil

[3] $ is a currency symbol for US dollars, and it will be used throughout this thesis
[4] https://cocoainitiative.org/news-media-post/cocoa-farmers-in-ghana-experience-poverty-and-economic-vulnerability/

fertility and climate change which make production difficult in old cocoa fields and fallow lands. This is because after long years of cultivation on forestlands, old cocoa fields exhaust their fertile soils. Often, old field tree crops are desiccated by drought and attacked by diseases and pests which often require intensive use of agrochemicals, fertilisers and labour. This makes cocoa more expensive to cultivate in old fields and secondary bushes than in the forest frontiers, which further drives cocoa expansion in forest protected areas (Amanor, 1994; Amanor, 2005; Amanor et al., 2020; Ruf & Siswoputranto, 1995; Gockowski et al., 2010; Gockowski & Sonwa, 2011).

Furthermore, farmers and their field crops are ageing (Löwe, 2017), and the youth are less motivated to engage in cocoa farming due to the associated high cost of production and lower income returns (Kroeger et al., 2017). As a result many youth are migrating to the urban centres which therefore creates labour shortages in the rural producing communities (Löwe, 2017). On many occasions, some traditional chiefs and cocoa farmers cut down cocoa trees for rubber plantations and mining because they find the latter more profitable (Tschakert, 2009; Boateng et al., 2014; Snapir et al., 2017; Amanor et al., 2020).

Chocolate firms have become aware that these farm-level production and labour challenges coupled with increasing global ethical concerns about cocoa supply pose serious threat to the future supply of cocoa beans and their market credibility (Odijie, 2018; Ponte, 2020a; Krauss & Barrientos, 2021). In the cocoa sector of Ghana, state-led intervention programmes mentioned earlier have been in place, but they have not lived up to expectation (Löwe, 2017), and chocolate firms cannot risk relying entirely on the state for sustainability management at the supply chain (Ponte, 2020a). As a result, firms are intensifying the operation of their certification and sustainability programmes with the purpose to manage and properly create just market relations, promote fair producer market price, eliminate rural poverty, empower women, incentivise the deprived producers and facilitate sustainable farming for forest conservation (Goodman et al., 2012; Jaffee, 2007). Moreover, the operations of certification programmes by private sector firms are not only intended to address the market and social rights of producers and workers but their operations also demonstrate the corporates' accountability and ethical capacities (Blowfield & Dolan, 2008).

However, there exists structural limitations that shape how certification could address the ethical concerns (Blowfield & Dolan, 2008; Glin et al., 2015). For instance, the state's dominance in Ghana—often exerting political and economic control with its institutional structural framework—over the private sector raises questions about the difficulty or inability of firms to govern the rural cocoa producing regions with their certification programmes to shape local agrarian context and enable farmers benefit adequately from these schemes. In 2020, Ghana and Cote d'Ivoire imposed and enforced a $400 per metric tonnes Living income differential (LID) as new premium price on cocoa produced by smallholders. Some chocolate companies such as Hershey and Mars Wrigley avoided the payment of this new higher premium price and sourced cocoa from ICE futures. As a result, the two states halted sustainability schemes run by the chocolate firms. This state interference or protectionism produced a rippling effect such as lack of potential buyers and trading of cocoa beans below the standard market price (Almeida & Bassompierre, 2021; Aboa & Angel, 2020; Munshi & Terazono, 2020; Terazono & Munshi, 2020). To guarantee consumers demand of ethical cocoa through sustainable sourcing, some chocolate firms later agreed to the demands of the state regarding the LID (Myers, 2021).

Beyond the state-private sector power struggles, it still remains contentious whether the private sector programmes actually deliver the benefits as promised. For instance, it is asserted that certification programmes normally act as an alternative form of rural development in the global South (Goodman, 2004), that replace state absence or failures in rural communities (Cashore et al., 2004; Jackson & Apostolakou, 2010) to increase farmers' income, enhance their access to productive inputs, agronomic services and promote conservation. However, in many instances, the benefits that manifest in the rural producing communities are accompanied with burdens (Ruben & Fort, 2012).

Deforestation in and around cocoa farms still persist despite firms' zero-deforestation commitment under the sustainability and certification schemes at the supply chain. Currently, the European Union is threatening to impose a ban on the importation of

cocoa from Ghana and Cote d'Ivoire because of the persistence deforestation[5], lthough there are claims that some tremendous strides have been made in the fight against deforestation (Nestlé, 2020; Mondelez International, 2021; Myers, 2021b). Based on this continuous cocoa deforestation, it is even envisaged that firms cannot meet their zero-deforestation commitment target in the producing countries like Ghana.

The uncertainty about firms' sustainability and certification programmes relates to the existing argument that many of such rural development initiatives in producing countries are operated to integrate suppliers further into the commodity relations (Bernstein, 1977) to produce purposely for the external market (Beckman, 1977) and disregard local social relations of production that often cause labour exploitations, dispossessions, unequal distribution of resources and produces unsustainable land use practises (Schroeder, 1999; Ferguson, 1994). Daniel Jaffee affirms that most market-driven certification schemes are used as tools by companies to transform labour and production practises, and skew the benefits to themselves, while producing negative or unjust socio-ecological footprints (Jaffee, 2007).

Following the recent institutional governance arrangements in Ghana's cocoa sector involving both the state and the private sector certification programmes, the most crucial question is: how does this new institutional dynamic or hybrid form of governance shape production and labour practices of smallholder farmers to bring about socio-environmental changes at the supply chain? **It is therefore the aim of this thesis to examine the power relations between the state, chocolate firms and smallholder cocoa farmers in Ghana, and the extent to which these relations produce sustainable socio-ecological transformation in its rural cocoa producing communities.** The focus is on a firm-led certification programme i.e., Mondelez International certification programme, how it is operated and its potential transformational effects. I approach this aim of the thesis through the lens of Political Ecology which fundamentally unpack the effects of power relations on

[5] https://www.myjoyonline.com/european-union-threatens-to-impose-restrictions-on-ghana-cocoa-exports/

socio-environmental changes (Robbins, 2012). I address this overarching thesis' aim through four major research questions as follows:

- How does a private sector firm govern or become embedded in rural cocoa communities with its certification programme to influence local agrarian context?
- What benefits (and burdens) do farmers obtain from the certification programme and why?
- To what extent does the programme consider local social relations of cocoa farming in the rural communities, and what is its effect on farmers' livelihood security?
- How does a certification programme affect farmers' agro-environmental decision to transition from cocoa monoculture to cocoa agroforestry?

1.3. Key motivations, main findings and arguments

Several academic works inspire or relate to the formulation of these political ecology-type research questions. Here, I outline the most notable ones and relate them to the main arguments and brief findings in this thesis.

- *How does a private sector firm govern or become embedded in rural cocoa communities with its certification scheme to influence local agrarian context?*

The first research question is inspired by the works of Tad Musterbaugh, Peter Gibbon, Stefano Ponte, Peter Taylor and Laura Raynolds. Their studies focus on governance of certification programmes at the global, regional, national and local levels and how they produce varied forms of contextual transformations. For instance, Mutersbaugh (2005) attributes certification as a way of organising quality labour and regulating the behaviours, choices and practices of multiple actors. His argument is that through monitoring tasks, quality labour and ethical values are recruited into a commodity, while regulatory framework of certification produces a common 'market space' that binds firms, producers and consumers together. Essentially, such labour recruitment process and regulatory instruments create certified production space with distinct social arrangement.

Beyond the organisational and regulatory potentials of certification standards, he also argues that certification norms for organic coffee change governance and economic management practices of farmer organisations. He stressed that certification standards and new market norms burden villagers and regional leaders with new responsibilities and alter the economic governance of household and villagers in Mexico (Mutersbaugh, 2002). Moreover, certification standards serve as tools for governing the value chain of commodities with implications on food safety, environment, labour and market relations (Gibbon et al., 2010; Ponte et al., 2011; Ponte & Gibbon, 2005; Ponte, 2008, 2012). These scholars also stress that private sector certification schemes and their standards tend to gain and assert an authority over the production and labour practices of producers in the global South despite the existence of national and local standards and authority.

On the other hand, there are studies that focus on how certification schemes fit within a particular context. Taylor (2005) for instance uses the concept of embeddedness (Polanyi, 1944) to uncover the difficulties of Fairtrade's standard operations within existing political, socio-cultural and institutional contexts. He emphasises that certain contextual factors such as conventional market logics, practices and dominant actors can shape governance structures and alternative values such as social justice and environmental conservation of certification initiatives. Also, Raynolds et al. (2007) document the challenges and capacities of Fairtrade schemes to transform and uphold the values of the conventional market and institutions, and regulate social and environmental standards.

This thesis adds to these insightful scholarships by focusing on the extent to which the governance of a certification scheme shapes local agrarian institutional forms. I further relate the governance of certification scheme to van der Ploeg's inspirational work on the new peasantry in the current global capitalist economy (van der Ploeg, 2009) where he shows how peasants gain an autonomy through territorial cooperatives to reduce their dependency on the state and avoid being marginalised, and to own and operate with new forms of governance principles. He shows how the peasant economy navigates complex dynamics but maintains that in most cases peasants do not entirely change their attributes.

My analysis shows that the governance of a certification scheme is a process whereby a firm inserts and operationalises its scheme in a local agrarian context by co-opting contextual institutional forms. However, instead of being shaped by contextual factors, the operations of a certification scheme rather tend to change and maintain some local institutional forms as it becomes well embedded in the local setting. I argue that while this firm-led certification schemes grant institutional autonomy for certified smallholder farmers and reduces their dependency on the state, it instead creates farmers' dependency on the firms. This new relation benefits firms in terms of the regular supply of certified cocoa beans. I relate this governance process and effects to the neo-Chayanovian peasant studies that peasant attributes do not entirely change in the event of capitalist interventions. Some of their attributes are maintained. This is made possible because firms have the powers to do so to pursue their market-oriented interests.

- *What benefits do farmers obtain from the certification scheme and why?*

This research question draws on the impact studies of certification schemes. Such impact studies are diverse and tend to produce contradictory findings and arguments (Ruben & Fort, 2012). One dimension of the impact studies usually highlights the positivity associated with certification programmes at the supply chain. These studies argue that for example Fairtrade certification schemes strengthen local producer organisations, and the producers' compliance with Fairtrade standards provides positive returns and offers better quality life (Ronchi, 2002; Milford, 2004; Calo & Wise, 2005; Bacon, 2005; Bacon et al., 2008; Jaffee, 2007). Other studies also emphasise that Fairtrade certification schemes provide producers with access to credit, education, training, improve the management of products and lead to expansion in producer's production (Murray et al., 2003; Taylor, 2005; Becchetti & Costantino, 2008). Meemken & Qaim (2018) recently found that sustainable certification standards promote gender equality among certified coffee producers in Uganda. They specifically reveal that Fairtrade and UTZ sustainability standards increase wealth in both male and female-headed households. The standards also alter intra-household distribution of asset ownership especially in male-headed households. Some impact studies also document the environmental performance of certification schemes (Giuliani et al., 2017). For instance, Blackman & Naranjo (2012) found that organic coffee certification reduces application of chemical inputs and increases farmers'

adoption of some environmentally friendly farm management practices in Costa Rica. Also, in Ethiopia, forest coffee area under certification increases the possibility of forest conservation than that of uncertified areas (Takahashi & Todo, 2014).

The other dimension of the impact studies portrays the bittersweet aspects of certification schemes. For instance, Fairtrade organic coffee producers in Nicaragua and Mexico achieve better yields but are burdened with high labour cost. As a result most farmers remained in poverty despite increase in yields and income levels (Barham, 2002; Bacon et al., 2008; Valkila, 2009; Valkila & Nygren, 2010). In Costa Rica, Snider et al. (2017) argue that while certification scheme does provide non-financial benefits to both farmers and cooperatives, low market demand for certified coffee, poor price incentives and high auditing and management costs undermine full participation of the entire membership of the farmer cooperatives. Moreover, certification schemes improves farmers' productivity, incomes, biodiversity and carbon storage in Uganda, but the trade-offs between the socio-economic and environmental outcomes still persist (Vanderhaegen et al., 2018). On the other hand, while Fairtrade increases the use of chemical inputs and average level of toxicity, the health problems associated with pesticide application may reduce as a result of education and occupational health safety training offered by farmer cooperative society for cocoa farmers in Cote d'Ivoire (Sellare et al., 2020). Some recent impact studies argue that certification programmes produce uneven distribution of benefits and entrench existing inequality. In the cocoa sector of Cote d'Ivoire, Fairtrade certification reduces poverty among cooperative workers more than the already poor farm workers. This is because cooperative workers receive better improved wages than the farm workers (Meemken et al., 2019; Meemken, 2020). These differential effects of certification programme are also very peculiar among coffee producers in Mexico (Jaffee, 2007).

Most of the impact studies are often based on quantitative data and statistical analysis, hence usually lack in-depth perspectives and lived experience of smallholder farmers and other actors involved (like cooperative workers). Also, these studies while unpacking the benefits and burdens of certification, do not show the "structural and relational mechanisms" (Ribot & Peluso, 2003; Peluso & Ribot, 2020) through which benefits and burdens are distributed to farmers. An exception is Neimark et al.'s (2019) work that analyses multiple benefits of sustainability initiatives in Vanilla production

systems in Madagascar by mapping the access mechanisms of those benefits. Additionally, these studies mostly do not place the distribution of benefits and burdens within the political and economic context and the power relations that shape the distribution process.

This thesis provides additional contribution to the existing impact studies by examining the bittersweet aspect of a certification scheme at the farm level through a qualitative research method approach. Through the perspectives and narratives of smallholders and cooperative workers, I specifically explore and examine the incentives of a certification scheme as access mechanisms through which farmers gain benefits. I found that there are web of relations or linkages between the incentives and benefits. Thus, two or more benefits are derived from one or more incentives provided by the certification schemes. While a firm relies on incentives to legitimise its powers and operations in rural communities, the incentivisation mechanisms at the same time produce uneven benefits and burdens. I also found that there are constant power struggles between the state and the firms over the provisions of sustainable incentives to farmers. I argue that the main driving force behind a firm's incentivisation mechanism and effects is due to the unsuccessful relation between the farmers and the state.

- *To what extent does the scheme consider local social relations of cocoa farming in the rural communities, and what is its effect on farmers' livelihood security?*

This question relates to the literature on upgrading within the global commodity or value chain that focuses on the skewed interests and priorities of firms, and their market-centred relations with producers in the management of sustainability at the supply chain. The first aspect of this literature deals with economic upgrading, which emphasises the improvement in farmers' products and production practises as a result of their compliance with certification standards (Laven, 2011; Evers et al., 2014). The second focuses on social upgrading, which centres on alleviating the working conditions of suppliers and providing them with rights (Barrientos et al., 2011; Barrientos & Visser, 2012). There are also studies about environmental upgrading that shows how supply chain environmental strategies of lead firms lead to eco-efficiency and product upgrading with eco-branding (Jeppesen & Hansen, 2004; Marchi et al., 2013; Achabou et al., 2017; Marchi et al., 2019; Ponte, 2020b).

Most of these studies on upgrading highlight both the positive aspects and the downside of certification or sustainability schemes as mentioned previously. They also portray top-down thinking of how firms shape the economic, social and environmental attributes of producers and their products at the supply chain (Krauss & Krishnan, 2016). Those studies of upgrading present a firm-centred idea of how firms (re)orient themselves through market intervention measures to gain benefits. For instance, Bair (2008, p. 5) defined "upgrading as the process by which actors (principally firms) seek to reposition themselves along the chain in order to increase the benefits (e.g., security, profits, technology or knowledge transfer) that they receive from participating in it"

There are often contradictory priorities and tensions between lead firms and local producers regarding the benefits of upgrading (Krauss & Krishnan, 2016). Some scholars have emphasised that those contradictions and firm-centred interests or priorities lead to marginalisation of local producers (Dolan & Humphrey, 2000; Evers et al., 2014) where firms disproportionately accrue benefits from supply chain intervention schemes to the detriment of the suppliers (Gibbon & Ponte, 2005). For example, Krauss & Krishnan (2016) provided a case study of how a lead firm prioritises commercial or market benefits such as high-quality crops, crop yield and volumes, safeguarding supply, reputation, traceability and food safety more than other socio-economic and environmental benefits at the local cocoa producer level in Nicaragua. Raynolds (2009) argues that often the underlying priorities of firms shape the kind of relationship they establish at the supply chain. This is why despite the transformation along the value chain by certification scheme, specific underlying power inequalities between firms and producers have not changed (Barrientos et al., 2008; Barrientos et al., 2011; Barrientos, 2013, 2019; Grabs & Ponte, 2019). It is therefore important to know the extent to which lead firms' upgrading practically mean to the local producers (Krauss & Krishnan, 2016).

The analysis of this research question adds to the existing scholarship regarding firms' upgrading and the extent to which the existing local realities show their skewed approach to the operations of certification scheme. I focus on local social relation and conditions of production—key attributes of peasant economy—as entry points to understand the extent to which firm's motivations and priorities contradict producers' contextual conditions, relations and needs. I found that most unjust social relation and conditions of production at the supply chain still exist and render livelihoods of

farmers insecure in the form of dispossession of plots of cocoa fields, labour exploitation and uneven access to benefit returns. My argument is that these social relationships and conditions persist because the firm has a mission, quality and market-driven priorities (Raynolds, 2009) in the operation of the certification scheme than alleviating unjust relations and conditions of cocoa production. I also argue that this firm-centred interest will continue because the existing unjust local realities do not affect continuous supply of "certified ethical cocoa beans" to the firm. I conclude with the statement that the continuous disregard of these local relations and conditions question the so-called ethical value of cocoa beans produced by the farmers unless firms holistically alleviate those production injustices.

- *How does a certification scheme affect farmers' agro-environmental decisions to transition from cocoa monoculture to cocoa agroforestry?*

This research question draws on studies that focus on ecological changes in commodity production landscape like coffee, cocoa, rubber or arecanut (Robbins et al., 2015). Often conservation scientists and land use change scholars use quantitative instruments and remote sensing techniques to identify and analyse expansion and decline of forest cover in relation to crop production (Karanth & DeFries, 2010; Robbins et al., 2015). Some studies also demonstrate that commodity production landscapes can accommodate trees, support crop resilience and productivity, and even serve as wildlife corridors (Obiri et al., 2007; Bhagwat et al., 2008; Chazdon et al., 2009; Tscharntke et al., 2011). These studies usually inform state policy instruments and market-driven forest initiatives or conservation interventions like certification and sustainability schemes (Schroth & McNeely, 2011).

Similarly, some political ecologists have studied the changing ecological outcomes in tropical commodity production systems. For example, Dianne Rocheleau and other scholars reveal the impacts of political, ecological factors, and cultural change on tree conservation in agricultural land use systems (Rocheleau et al., 1988; Rocheleau, 1995; Rocheleau & Ross, 1995; Rocheleau & Edmunds, 1997; Steinberg, 1998). On the other hand, Schroeder (1999) rather unpacks the socio-cultural and economic impacts of agroforestry initiatives. He explains that changing development initiatives that focus on shaping socio-economic and environmental situations of local land managers

interact with local conflicting interest to affect their land, gender and labour relations and decisions.

Recently, political ecologists are again taking keen interest in the conservation of trees in tropical commodity landscape (Hausermann, 2010, 2014; Robbins et al., 2015, 2020; Willis & Johnson, 2020) because of the increasing deforestation and also the conservation potentials of most tropical tree crops fields like coffee and cocoa farms. Moreover, the rising interest is because most conservation scientists and land use change scholars (who use quantitative instruments and remote sensing techniques) do not adequately explain the forces that influence ecological changes in tropical commodity production systems (Robbin et al., 2015). According to the political ecologists, there are a lot of forces that operate beyond immediate local context which need to be considered for (re)framing conservation initiatives in agrarian landscapes (Robbins, 2012). They argue that local smallholder farmers' conservation decisions are mostly driven by political and economic factors such as land ownership rights, economic incentives, cost of input, policies, etc. which are linked to the state, the market and other external actors (Robbins et al., 2015, 2020).

This research question is inspired by these recent political ecology studies. I aim to understand how local and external relational drivers influence the potentials of firm-led certification programmes to promote cocoa agroforestry. I found that local contextual factors such as planting and existence of hybrid cocoa tree varieties on farms, continuous rehabilitation of cocoa farms, access rights in trees and labour relations, illegal logging, proliferation of small-scale sawmill and timber concessions policies of the Forestry Commission influence farmers' conservation practises in cocoa farms. The persistent influence of these drivers on the maintenance of shaded trees on farms is as a result of certain historical and ongoing political and economic forces. I argue and conclude that while the certification programme has the potentials to promote cocoa agroforestry, these underlying drivers impede its progress and hence should be taken into account in scaling up conservation-focused certification programmes.

1.4. Justification of the study

The global cocoa industry is a multi-million-dollar industry, creating employment, facilitating national industrial economic growth and revenue and meeting consumer needs. Powerful in this industry are global chocolate firms who increasingly deploy certification programmes as tools to govern and shape the socio-economic and environmental dimensions of the global value chain following the demands for sustainable value chain transformation. Such governance of the value chain is considered both as business and political project by private sector firms who rely on certification to account for their corporate commitment towards value chain sustainability transition and demonstrate the scope of social values of their business model (Loconto & Busch, 2010). Firms are in competition to execute and legitimise certification programmes as supply chain solutions (Ponte 2019a). It is therefore important to understand the effects of firms' significant roles in diverse socio-cultural, political and institutional context. The cocoa sector of Ghana provides an important context to gain this insight as a result of the recent proliferation of private sector certification programmes. Although the Ghanaian cocoa sector has been studied thoroughly, little is known about how certification programmes are embedded in the local context and operated to fulfil their inherent promises in Ghana.

Also, while there are many actors such as the state, firms, NGOs, Standard Development Organisation, National Standard Boards, producers and producer cooperative organisations involved in the operation of certification programmes, few studies assess the operations and performance of certification programmes with the focus on power relations and tensions among actors. This thesis is relevant because it adds new contribution to the global value chain and political ecology research (cf. Perreault et al 2015). It enables us to understand the governance of global value chain through the lens of political ecology. This is because it focuses on the power relations between the state, the private sector firms and smallholders in the context of social and ecological performance of a certification programme in the global value chain governance. Certification programmes are regarded as initiatives of 'Northern origin' used by the actors in the global North to pursue certain socio-economic and environmental agenda in the global South (Hughes et al., 2014; Odijie, 2018; Krauss & Barrientos, 2021). The thesis therefore brings to understanding how varied scale of powers operate to shape local production and labour practices, while justifying that the

context specificities are paramount in mediating the scale of influences. Based on the operation of numerous certification programmes in the cocoa landscape of Ghana, this thesis makes a strong case of how and why certification continues to be a governance, and corporate social and environmental accountability tools in global value chain with visible (or invisible) ramifications. The thesis also demonstrates how certification is mobilised to strengthen the powers of the private sector and creates a new form of autonomy and self-government for smallholder producers which did not exist before. I therefore argue that this has been possible because of the powers that emerged from ethical movements in the global North. This shows how power that establishes a new regime of social justices and environmental sustainability in the global value chains could be appropriated for business and political purposes by private sector and even the state. The analyses and arguments of the thesis therefore provide empirical and theoretical foundation for future research on political ecology of commodity certification and sustainability transition in global food systems.

The findings that this thesis produces have practical policy implications for the state, private sector firms, and for smallholders. The private sector and states have committed—via alliance building and collaborations—to mainstreaming and upscaling sustainable solutions in the value chain for mutual benefits. Therefore, the state and most importantly private sector firms could use the findings to develop innovative solutions for sustainable futures. The findings of the thesis again can inform stakeholders, particularly the state and the private sector firms where, when and how to make changes for future scaling up of certification programmes. This thesis is also relevant to the growing number of large ethical chocolate consumers. It provides them with the real perspectives about the effects and challenges of mainstreaming and upscaling ethical programmes like certification in our food systems. The evidence in this thesis about certification are to inform ethical consumers that transition towards sustainability in our food systems is a gradual process which involves identification of challenges or constraints and providing innovative solutions to them.

1.5. Research methodology

This section details the methodology adopted to undertake the study. Research methodology is the approach employed to conduct a research and produce findings and conclusions. It involves the selection of systematic and scientifically acceptable

strategy, methods and procedures to investigate questions about a phenomenon or problem (Kitchin & Tate, 2013). In the case of this thesis, the problem or object of investigation is power and its relational effects on socio-ecological changes in connexion with private sector firm certification programme in Ghana. Research methodology in geography is mostly qualitative, quantitative and mixed (or triangulation of the first two) (Clifford et al., 2016). The choice of a particular or combination of the methodology is often influenced by the philosophical stance or approach of the researcher (Kitchin & Tate, 2013). Power and its effects as the main focus of this thesis are often difficult to examine using the above-mentioned research approaches. However, I strongly believed that deploying qualitative methodology to uncover the thoughts, perceptions, narratives, feelings and experiences of respondents (Limb & Dwyer, 2001; Minichiello et al., 2008) would enable me to deeply understand and appreciate the effects of power elements such as resources, roles, responsibilities, rule systems, actions, practices, behaviours etc. While I largely employed qualitative data collection and analytical methods, I must say that there were some points where it became relevant for me to additionally rely on basic quantitative analytical techniques to complement the analysis of the data.

Moreover, qualitative research methodology is associated with various forms of research strategies such as ethnography, grounded theory, phenomenology, narrative research, participatory action research, discourse analysis and case study. Each of these research strategies has its own strengths and weaknesses (Creswell & Creswell, 2017). This thesis rather adopted a case study as research strategy. It will be too much for this thesis to argue the choice of case study against the other research strategies. However, for the purpose of this thesis I provide in the subsequent sections why I chose case study, and selected Mondelez International's cocoa certification programme as a case in Asunafo-North of Ghana. I also explained and justified how I sampled the respondents and the selection of qualitative research instruments or methods for the case study.

1.5.1. Case study

A case study is a strategy of research inquiry in which the researcher explores and provides an in-depth understanding of a program, event, activity, process, or one or more individuals. Cases are based on time and activity, and researchers could use a

variety of data collection procedures over a period of time to provide detailed information about a phenomenon or subject under research (Stake, 1995). This research strategy is based on the assumption that often there is a blur relationship between an event or phenomenon and its context. Hence, critical and systematic process of data collection and analysis can give a detailed understanding of the realities of how an event or phenomenon is situated in its context (Yin, 2012).

Case studies can provide in-depth understanding of an event or phenomenon. Case studies can be used to produce critical knowledge even beyond the phenomenon under study. Additionally, valuable knowledge from case studies provide the bases or mechanisms for conducting further studies and making in-depth comparisons among similar events, across sites, regions and countries. As a result, case studies produce cumulative knowledge, and results from a case studies could be used to make generalisations (Lund, 2014; Benjaminsen & Svarstad, 2021). Cases also provide rich understanding and further development of theories and concepts (Lund, 2014). As a result, there should be a careful and systematic selection of a case which should be a representative of the broader population (Yin, 2012).

However, choosing a truly representative case is not an easy task (Seawright & Gerring, 2008). Despite this being one of the challenges in case study research, this study went through a careful case selection process. The focus was on a firm-led certification programme and the extent to which it is situated in a rural cocoa producing region of Ghana. I tried to understand this with a case study approach. So, I aimed to examine: how power relation between the state, chocolate firms and smallholder cocoa farmers produce socio-ecological outcomes in rural cocoa producing context? This was my major case study question. Many cocoa certification programmes are operating in many parts of Ghana, but I chose Asunafo-North region as my case study area (Figure 4). In Asunafo-North, there are also many certification programmes. But I chose to study Mondelez Cocoa Life Programme. The process and reasons behind this case selection is explained below.

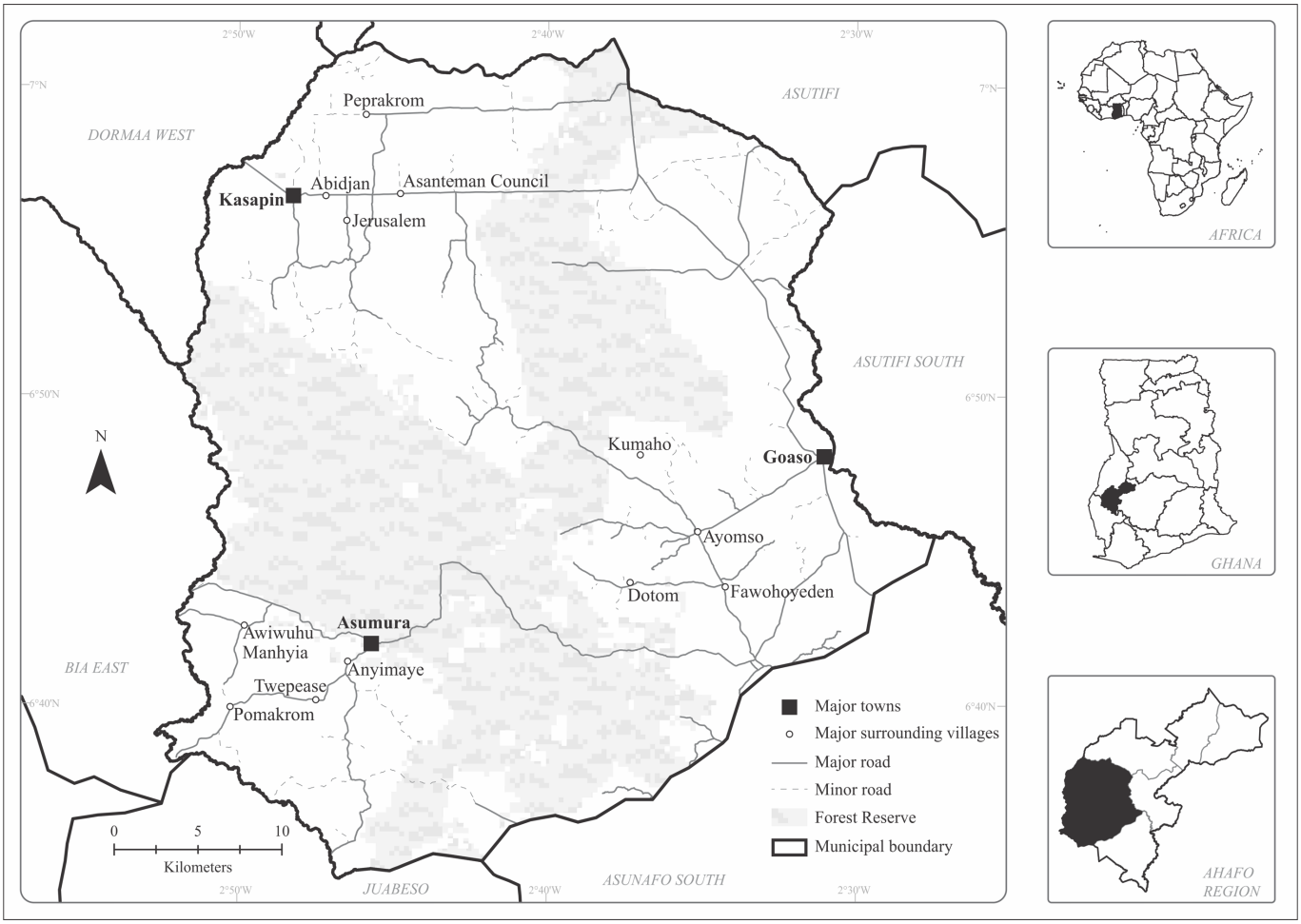


Figure 4: Map of Asunafo-North district showing various villages and towns as the study sites

1.5.2. Case selection: methodological justification

The Asunafo-North is one of the major cocoa-producing areas in Ghana. It is located in the newly demarcated political region of Ahafo, about 200 km north-west of the Ghana's capital Accra. Cocoa in this area, like in many rural Ghanaian communities, is generally produced on small farm scales. The cocoa production landscape is interspersed by state-owned forest reserves containing rich endangered tree and animal species. In many cocoa communities of Asunafo-North, there are various private sector sustainability schemes including firm-led certification programmes. The region falls within the boundary of the Ghana Cocoa Forest REDD+ landscape. And the certification programmes are part of the private sector strategic contribution to the Ghana Cocoa Forest REDD+ Programme. The task was to select a particular private sector certification programme as case for the study. It was therefore important to adopt a case selection technique to select the programme.

Seawright and Gerrings (2008) discussed seven techniques of case selection: typical, diverse, extreme, deviant, influential, most similar and most different. Each of these case selection techniques has a variety of methodological purposes which inform the adoption of particular case selection technique and the selection of the case (Seawright & Gerring, 2008). Since my aim was to select a programme as representative case, I decided to adopt typical case selection technique. Typical case selection technique involves choosing a case(s) that illustrates what is typical, normal and average to understand (Patton, 1990, 2014). Before the data collection, I explored technical reports and websites to understand the various types or forms of private sector certification programme and which actors were involved in the Asunafo-North. I also discussed this with the officials of Ghana Cocoa Board to obtain first-hand data on the list of private sector certification schemes, their main operational objectives, coverage and membership. So, I outlined criteria to help me select the programme that will be a typical or representative of all the certification programmes in Asunafo-North. The first criterion was to look out for certification programme whose operational objectives holistically cover the social, economic, and environmental aspect of cocoa farming (e.g., increase in household income, reduction of poverty, eliminating child labour, gender empowerment, forest conservation, etc.,). The second was to consider the coverage of the certification programme in terms of the number of villages or communities within which it operates. Thirdly, I considered the membership size of the farmer associations and cooperatives constituted by the certification programme. This was measured in terms of the number of certified farmers under each programme. Based on these criteria, I chose Mondelez Cocoa Life Programme instead of programmes such as Cocoa Abrabopa's certification programme, Barry Callebaut's Cocoa Horizon program (Cocoa Nyonkopa), Touton/Solidaridad UTZ and Rainforest Alliance certification etc.

Thus, the choice of the case—Mondelez Cocoa Life Programme—was therefore driven by the way it was largely situated in Asunafo-North region as compared to other programmes. It epitomised a private sector certification programme in Asunafo-North. It was the largest market driven sustainable production intervention programme in the region. With this certification programme, Mondelez (which owns the well-known Cadbury chocolate brand) is the lead firm, partnering with other chocolate companies such as Barry Callebaut, Cargill, Ecom, and Olam Cocoa. Some NGOs, notably Care

International, Jacobs Foundation, Save the children, World Vision, Solidaridad, Swissconnect and Voluntary Service Overseas are also supporting partners. The programme started in 2012. It is built on the Cadbury Cocoa Partnership programme, a company-led sustainability initiative started in 2008. Currently, the programme has a certified farmer cooperative society with membership of over 5000 smallholder cocoa farmers in 67 farming communities or villages and produces over 15,000 metric tonnes of cocoa every year. Certified members are farm owners (including absentee farmers). They could hire caretakers to manage the farm on their behalf, where benefits could be shared on *abunu* and *abusa* basis[6].

At the core of this certification programme is an effort to incentivise certified smallholder farmers to produce and supply the lead firm with cocoa beans in a more environmentally sustainable and ethical manner. This incentivisation mechanism of the certification scheme holistically focuses on three areas: (1) to promote sustainable cocoa farming businesses; (2) to empower cocoa communities; (3) to conserve and restore forests[7]. Such private sector initiative is based on the reason that Asunafo-North was one of the cocoa-producing regions where poor farmers engaged in poor labour and production practices. In 2020, the Farmer cooperative society earned an International Fairtrade Award as a Small Producer Organisation of the Year for demonstrating outstanding continuous improvement, innovation, inclusivity and non-discrimination, and contribution to Sustainable Development Goals (SDGs)[8,9,10]. It should be noted that, like all cocoa-producing regions of Ghana, the state parastatal, Ghana Cocoa Board (with its subsidiaries such as CHED, SPD AND QCCL) also have their branches in Asunafo-North. CHED and SPD mainly operate from their offices in Goaso. QCCL has their offices in the three major production towns such as Goaso, Kasapin and Asumura (Figure 4).

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[6] *Abunu* involves sharing of cocoa produce in equal halves between the farm owner and caretaker. *Abusa* a cocoa produce sharing arrangement where the farm owner takes two thirds, and the caretaker takes one third. The agreement of either abunu or abusa depends on the size of the farm and farm management workload.

[7] https://www.cocoalife.org/
[8] https://fairtradeafrica.net/wp-content/uploads/2020/11/Asunafo-North-Farmers-Union-wins-Fairtrade-Awards.pdf
[9] https://www.fairtrade.net/act/fairtrade-awards-2020
[10] https://vimeo.com/442797842

The selection of the case was also driven by how it was situated or can be contextualised in the various theoretical and conceptual elements of the thesis (cf. Seawright & Gerring, 2008). I employed diverse conceptual elements (this is addressed in chapter two) to analyse how the certification programme is governed and embedded in the study area, how it distributes benefits and burdens, the social relations among actors, and how scale of forces influences the ecological changes in cocoa production systems. I also wanted to understand the theoretical dimensions of the causal mechanisms in the case, and Mondelez Cocoa Life Programme as a result of its holistic operational objectives, coverage and membership clearly enabled me to achieve that theoretical purpose regarding private sector certification programme.

1.5.3. Field entry

Between 2018 and 2020, qualitative research methods were employed to undertake case study research on how the certification programme is situated within the context of Asunafo-North with the focus on how the state, firm and smallholder relations are producing social and ecological transformation. The initial strategy I adopted was to gain an entry to the field by making contacts with key stakeholders in the cocoa sector such as the farmer cooperative society, the subsidiaries of Ghana Cocoa Board and the Forestry Commission. These initial contacts enabled me to obtain preliminary information which provided the basis for me to restructure my interview guide and questions.

In order to start the actual data collection process, I decided to familiarise myself with farmer associations in most villages of the region. This initial familiarisation tour was also a way of deploying participant observation, direct and indirect observation. I did this by working with the cooperative workers in the distribution of the annual premium in the villages and attending the meetings of the farmer associations. I was a stranger among them. So, before the distribution exercise or a meeting in any village, a cooperative worker would introduce me to the members of the farmer association. He/she would tell them my mission and asked them to cooperate with me when I come back to ask questions about what they do and any issues regarding cocoa farming. I used about 3 days to explore and familiarise with about 30 villages or farmer associations. It was also an opportunity for me to observe and record the organisational activities of the cooperative society, what they distribute as premium and reactions of

the farmers. For example, because I was working with the cooperative workers in the distribution exercise, there were several occasions where some farmers came to us with their complaints and challenges. In most of the tours, I also observed, the cooperative workers distributing shaded tree species and hybrid cocoa seedlings.

During my tours, I also understood the institutional structure of the farmer cooperative society such as the management and executive body, the various committees within the society and the association, the organisational rules, the agronomic advisory body, model farms and storerooms, etc. Most times, I also asked the cooperative workers some questions regarding the premium such as why they distribute the premium every year, the benefits of the premium to farmers, etc. and farmers' reactions and narratives about the premium. I was also shown several photographs by the cooperative workers about past activities and projects such as model farms, nursery sites, communities infrastructural projects (like school buildings and water facilities), alternative livelihood programmes, community meetings, education programmes, agronomic training exercise, etc. The cooperative workers also provided me with a document that entailed Fairtrade organisational, production and labour standards. They also produced some documents that showed the records of the membership of the farmer cooperative society such as their name, gender, size of farm, location of farm, type of cocoa variety on farms, labour type of the farm (whether the farm is managed by the farmer himself/herself or it is managed by a labourer/caretaker), etc.

1.5.4. Data collection and analysis

After the familiarisation tour and gaining entry to the field, I began the actual data collection exercise. I sampled four villages around each of the major towns of Goaso, Asumura and Kasapin. The major towns were also included in the exercise, hence, I had 15 case study locations (Figure 4). I employed a number of research instruments to collect the data. A total of 157 interviews, including 49 in-depth interviews and 108 semi-structured interviews were undertaken. Research methods such as participant observation, direct and indirect observation were also used. The bulk of the interviews were conducted in 2018 and 2019, while 7 additional interviews were undertaken via telephone between 2020 and 2021 as follow-up research exercise. The respondents included the Fairtrade certified cocoa farmers, the cooperative workers, the executives, officials of Ghana Cocoa Board and Forestry Commission. Some of these certified cocoa

farmers were traditional chiefs and villages elders. Some cooperative workers were also cocoa farmers. I described below how I used the research methods and how the participants were selected for the interviews.

Semi structured and in-depth interviews

With respect to these interviews, I first focused on the certified farmers for the interviews. A simple random sampling was used for the interviews. In some cases, I used snowball to identify the certified farmers easily. The membership records that I obtained from the farmer cooperative office also helped me to confirm their affiliation with the certification programme. I benefited a lot from the initial familiarisation tours because most farmers easily identified me and were ready to answer my questions. In the sampled villages, the interviews were undertaken in their houses and farm fields. Some interviews were also conducted during farmer association meetings, education and training programmes, communal labour organisational activities and premium distribution exercise. I also took the chance to interview farmers during my observational exercise to see model farms and community projects. Some interviews were conducted while working with farmers in the harvesting and gathering of cocoa pods, fermentation sites of cocoa beans and drying of cocoa beans. In order to understand the conservation practises of certified farmers, shaded tree species identification and counting were undertaken. Some chiefs who were also certified farmers were interviewed as well. I was allowed to record the interviews in audio, take pictures and videos. I also took some notes while doing the audio recordings.

The local language (Twi) was used for all the interview sessions with farmers and cooperative workers except with the officials of Forestry Commission and Ghana Cocoa Board where both Twi and English were used simultaneously. Some of the interviews were conducted with the help of three field assistants. I was fortunate to meet two old schoolmates. One was a cooperative worker while the other was working with the Planning Department at the Municipal Assembly in Goaso. They also connected me to many contacts and gave me some initial relevant information. While doing the interviews with the certified farmers, I reserved some days in between to do interviews with the cooperative workers, officials of Ghana Cocoa Board and Forestry Commission. Few audio data and field notes were transcribed and compiled at the same time during the fieldwork.

	Semi-structured interviews	In-depth interviews
Chapter 3	23	11
Chapter 4	40	20
Chapter 5	*	*
Chapter 6	45	18

*Chapter 5 synthesises data from the entire case study

Table 1: Number of interviews used in each analytical chapter

Based on the research questions, the research methods and the strategies were conducted around four major research themes (or embedded cases/sub-cases): the operational practices of the certification programme, the incentives of the certification programme, farmers' relations of production and conservation practises of certified farmers. Interview questions and follow-up questions were framed around these themes.

Participant observation, direct and indirect observation

What largely complemented the data analysis was data obtained from participant observation, direct and indirect observation. I closely worked with the cooperative workers in the distribution of premium and technical training programmes. I also attended meetings of the farmer associations in most villages and that of the cooperative societies in Goaso. These enabled me to gain more insight in the service delivery of the certification programme and access procedures regarding certification incentives (agronomic inputs, skills, knowledge and cash). I was also able to observe, record and take notes of speeches, arguments, gestures, expressions, thoughts, disagreements, experiences etc. (during and after the research tours). In most cases, I worked and interacted with the smallholder farmers on cocoa farms to understand their experiences and thoughts about the certification programme, cocoa farming, application of skills and inputs, etc. and relations in the communities through their stories and narratives. Some previous information and knowledge about cocoa farming and certification partly guided my observation and conversation with farmers.

I employed thematic analysis technique to analyse the data. This involved identification and categorisation of themes in the data. Afterwards, I tried to understand the variations and the relationships between these themes and how they produce patterns of empirical stories relevant for the research questions. I later matched these patterns with conceptual elements and empirical findings about certification programmes in the literature to produce discussions and conclusions about the research findings. The analysis of the themes also involved combination of the field data and secondary data such as information from the website, newspapers, online news (e.g., confectionery news, Ghanaweb, myjoyonline, Bloomberg, financial times, journal articles, sustainability reports of firms, etc.). Four analytical chapters (3,4,5, 6) were produced in this thesis. In each analytical chapter, I have detailed the number of respondents selected for the interviews and the specific topics that permeated these interviews. Each analytical chapter used a subset of the interviews (both semi-structured and in-depth interviews) which were complemented by fieldnotes obtained through the field observations (Table 1). They were stratified based on the four research questions of the thesis (or the aforementioned sub-cases). I used thematic analysis to analyse the data for all the sub-cases except chapter 6 where I combined thematic analysis with descriptive statistics.

1.5.5. Positionality, reflectivity and ethical practice

While undertaking the study, it became important though difficult to reflect and position myself in the actual data collection process, values, attitudes, beliefs, emotions and the setting of the informants. Before the data collection, I realised that my previous background experience and knowledge about cocoa farming in Ghana could tilt to my advantage. For example, I had lived and obtained my High School Education in the region, therefore, I have practical knowledge of cocoa farming and lived experiences of farmers. Also, I have obtained in-depth knowledge from the literature regarding the history of cocoa farming in Ghana, social relation of cocoa farming, cocoa-forest connections and the production trends in the producing regions (For example Fields 1943; Berry 1993; Hill 1959, 1961, 1963; Austin 1987, 2005; Hunter 1963; Wilson 1990; Amanor 1994, 2001, 2005, 2010). But at the same time, the past experience and knowledge could be a weakness because it could undermine the data collection process and validity. So, for example, I reflected on the fact that previous knowledge about cocoa farming will prevent me to ask relevant questions in relation to cocoa farming

such as access to land, labour and inputs since these information have been extensively documented in the literature. However, I allowed the knowledge that I had obtained from the literature and the experiences to guide the framing of the specific research questions and follow-up questions during the interviewing process. At the same time, I positioned myself as researcher who was curious to know whether there was new development about cocoa farming and the certification programme. Such curiosity facilitated the engagement of farmers and other informants in the interviews. These positionalities helped me to unpack in-depth local knowledge about cocoa certification and farming practices. Also, working with farmers on farms and engaging them in informal conversation glossed over the power imbalances between me as a researcher and the smallholder farmers. This positioned me as one of them hence it was easier for the farmers to tell me their stories and provide narratives about certification and cocoa farming.

Furthermore, in many communities, there were traditional working days and non-working days. Non-working days were normally associated with the culture and taboos of some communities. While conducting the research, it was indeed very important to respect culture and norms of the smallholders. So, on-farm tour for inspection, forest tree identification and counting with farmers were not undertaken during the non-working days. Rather, I used most traditional non-working days to conduct in-depth interviews and semi-structured interviews in the homes of the farmers. Also, there were occasions where some farmers lodged complaints and disagreements about their share of the premium to me. Even though I was working with the cooperative workers in the premium distribution process, I had to position myself as a researcher and not a cooperative worker. So, I referred them or asked them to consult the cooperative workers and executives to help address their concerns. More so, during and after each interview section, I reflected on and referred to the interview guide to check whether relevant questions have been asked. I also cross-checked the derived data to see whether there are new and consistent patterns of information or fresh revelations that merited reframing of interview questions or further investigation.

As part of the research process, I exhibited ethical practices so that this thesis would gain credibility. The ethical practices involve practices in which the researcher behaves with integrity and act in a just, beneficent and respectful manner (Clifford et al., 2016). The first ethical practice I exhibited was to seek the consent of the informants (the

cooperative workers, farmers, officials of Ghana Cocoa Board and Forestry Commission) before the interview was conducted. I did this by personally presenting an official letter obtained from my academic supervisor which detailed the aim and objectives of the research project and its relevance. The letter also highlighted the request from the informants to cooperate and grant me interviews. Since it would be difficult for most of the individual farmers to read and understand the content of the letter, I asked the cooperative workers to introduce me and tell the farmers—during initial familiarisation tours—about the purpose of research. The cooperative workers also asked the farmers to cooperate with me during the interview process. I also sought the consent of the informants before taking pictures and doing audio recordings. I additionally edited the data to exclude insults or any information that would demean the informants and potential stakeholders.

1.5.6. Limitations and challenges

I encountered few challenges during the fieldwork. I had limited time period during my first fieldwork (about 5 months in 2018). The limited time was defined by my initial 3-year PhD scholarship[11] length. During my fieldwork exercise in the villages around Asumura, there were some occurrences of murder in the villages. As a result, I was gripped with fear and anxiety during the fieldwork tour in the cocoa fields in the villages surrounding Asumura. But I was assured of protection by the farmers in those villages. I also had about two months for second fieldwork exercise. With the second fieldwork, I was disrupted by some health conditions. Some information from Ghana Cocoa Board was considered confidential and they were not provided.

Also, farmers were not comfortable at the initial stage with question regarding the specific shaded trees they have on their farms and their numbers. This is because of ongoing illegal logging activities in the area. They were sceptical about how that information would be used and how it might affect their cocoa farms. However, I consistently advised that the information were absolutely for academic purposes.

[11] I was able to extend the thesis for a year through the Doc.Mobility scholarship funded by Swiss National Science Foundation in 2019 which allowed me to interrupt the Swiss Government Excellence Scholarship to work with Dr Benjamin Neimark at Lancaster University, UK.

The COVID 19 came in 2019 with its own impacts on mental health, motivations and academic work. I planned to do a field-based follow-up research. But this could not happen because of COVID-19 lockdown and travel restrictions. However, I had contacts with some farmers, cooperative workers, officials of COCOBOD who helped me to do follow-up interviews and enquiries via telephone (and WhatsApp). Some contact persons also introduced me to some experts who provided me with relevant information. Again, due to time constraints, COVID 19 and rigid bureaucratic procedures of private companies, I was not able to interview the officials of the Mondelez International and Fairtrade Organisations.

1.6. The structure of the thesis

This is a thesis-by-publication, and the four result chapters are all presented as article manuscripts prepared for journal publication. The reader is thanked in advance for tolerating the inevitable redundancies produced by such an approach. Each chapter is preceded by a short preface that ties it into the overall thesis project. Four manuscripts were produced, each correspond with the four research questions presented in the first chapter. Chapter 3 focuses on the governance of certification. This chapter analyses how the certification scheme is governed or operated to influence the local agrarian context. Chapter 4 looked at how certification incentives serve as access mechanisms for the distribution of benefit and burdens, while chapter 5 uncovers the injustices associated with cocoa farming in terms of who loses what, how and why as the certification programme unfolds. Chapter 6 unpacks the conservation practises of certified cocoa fields. This chapter exposes the local contextual and political-economic drivers that shape conservation of shaded trees in certified cocoa farms. After the four results chapters, a final chapter summarises and concludes the thesis. I list below the papers that constitute the four analytical chapters of this thesis.

Lists of the manuscripts

1. ***Chapter 3***:

    - **Amuzu, D.,** Kull, C., Neimark, B., Walters, G., (2021). Firm-led certification scheme powers local agrarian institutional change in Ghana. Target: *Near submission. Journal of Agrarian studies*. **Co-authorship**: Contribution 95%

2. ***Chapter 4***:

- **Amuzu, D**., Neimark, B., Kull, C., (2021). Bittersweet cocoa: the use of farmer incentives in certification programmes in Ghana as a battleground for legitimacy, authority, benefits, and burdens. Submitted to *Geoforum* on the 14th December 2021. Received reviewers' comments on 19th April 2021. Re-submitted the first review version on the 18th August 2021. **Co-authorship**: Contribution 95%

3. ***Chapter 5***:

- **Amuzu, D.,** Changing access status of smallholders in cocoa land-use systems: An overlooked manifestation in sustainable agrarian transformation[s]. Target: *African Geographical Review*.

4. ***Chapter 6***:

- **Amuzu, D.,** 'Sustainable land use transition towards cocoa agroforestry in Ghana: What are the potentials of private sector certification schemes?' Target: *Journal of Political Ecology*.

1.7. Conclusion

This chapter introduced and problematised the main features of Ghanaian cocoa economy as being characterised with a devastating social and land use problems. Those conditions are addressed by the private sector through certification schemes in a state-controlled cocoa economy. The chapter highlighted the purpose of the thesis, that is to unpack how power relations affect the certification scheme to embed on, configure or modify the Ghanaian cocoa production space both politically and socio-ecologically. The chapter highlighted key research questions, gaps, motivations and main findings. How the research is conducted is also articulated. In the next chapter, I discuss the theoretical approach and varied frameworks employed in this study.

Arriving at Goaso, Asunafo-North for a political ecology study
Picture by the author, 2018

Chapter Two: Theoretical approach

2.0. Introduction

This chapter introduces political ecology as the general framework I use to address the main aim and the four major research questions of the thesis. Four related conceptual or analytical tools are employed to address the research questions. The conceptual tools are commonly used in the field of political economy, peasant studies and political ecology. The choice of multiple conceptual tools for the evaluation of the research questions is in line with political ecology research studies, which have been influenced by or draw on diverse school of thoughts, critical concepts, theories and methods (Robbins, 2012). The chapter begins with a theoretical description of political ecology where I stress that power relation is a fundamental theme in political ecology research. I describe how power is conceived in political ecology by elucidating Svarstad et al. (2018)'s three interrelated perspectives on power (actor-oriented, neo-Marxist and post-structural perspective). I also review how power is conceptualised in the global value chain research and relate it with that of political ecology. I emphasise power because this thesis is about the extent to which power relations between the state, the cocoa farmers and a private sector firm influence social and ecological outcomes. After that, I present each conceptual tool used for the analysis in this thesis. The selected conceptual tools include governance (and new peasantries), the notion of access, social relations of production and the chain of explanation. Certification programmes are governance tools for facilitating sustainability transition in the global value chains. And this thesis is concerned about how and what sustainable transformation is taking place in Asunafo-North. As a result, I acknowledge the sustainability literature but justify why political ecology approach is needed for this research. I conclude the chapter by identifying and justifying the core "thematic string" that binds the various conceptual or analytical tools together which is at the centre of this thesis.

2.1. Political ecology

Political ecology is an approach to socio-environmental analysis that has gained much credence in recent decades (Benjaminsen & Robbins, 2015). It draws on diverse schools of thought or fields but has central focus on power within the political

economy, and its relational effects on our socio-ecologies (Bryant & Bailey, 1997; Robbins, 2012). So, political ecologists address the socio-environmental changes caused by power relations between state and indigenous people or local land managers, and among rural dwellers (Bryant & Bailey, 1997; Benjaminsen & Svarstad, 2021). There is also an increasing focus on the influence of powerful actors such as inter-governmental institutions, regional bodies, transnational companies and NGOs in changing local economies and shaping environmental conditions (Bryant & Bailey, 1997).

The relations and the socio-environmental changes are mostly analysed in the context of how national economies and local people are integrated in the global capitalist economic system (Watts, 1983; Blaikie & Brookfield, 1987). Scholars of this field are also concerned with how powerful or influential actors define and talk about social and environmental problems and how this affects the control and distribution of resources (Forsyth, 2003; Maginnis & Sayer, 2005; Forsyth & Walker, 2008; Kull et al., 2015). Some political ecologists also look at the responses of subalterns and marginalised groups to the powers exercised by the state, local elites, corporate bodies and other powerful groups (Cavanagh & Benjaminsen, 2015; Hall et al., 2015). With this central focus on the various forms of power relations, the critical question that political ecologists ask is who is winning and who is losing. This enables an understanding of how power is distributed and what effect it has on different individuals or group of people (Blaikie, 1985; Robbins, 2012).

2.1.1. Theorisation of power in political ecology

There is a vast body of literature on the political, economic and cultural aspect of power including for instance, the work of Lukes (1974), Foucault (1977), Mann (1986), Cox (1987) and Escobar (1995) (Bryant & Bailey, 1997). However, political ecologists especially those who started their studies in the Third World chose to limit their focus on the environmental dimension of power, where power is understood as the "ability of an actor to control his/her own interaction with the environment and the interaction of other actors with the environment" (Bryant & Bailey, 1997, p. 37). Today, the field has grown to embrace different analyses of power that draw on diverse body of literature (Mbembe, 1992).

Svarstad et al. (2018) have provided definition and categorisation of power that is mostly analysed in political ecology. According to them, power could be understood from three interrelated perspectives such as actor-oriented, neo-Marxist and post-structural perspective. The first is concerned with power exercised by actors with the intention to achieve a particular outcome (Engelstad, 1999). The exercise of power is defined by the nature and availability of resources or means such as the various types of capital (Bourdieu, 1986). Moreover, the existence of structures whether intentionally created or not (Svarstad et al., 2018a) may constrain or enable the exercise and distribution of power (Dowding, 2008; Ribot & Peluso, 2003). For example, institutional structures may constrain or facilitate intended intervention measures. Also, some actors as a result of their structural orientation can restrict, oppose or may benefit from the power or actions of others (Bourdieu, 1977, 1989; Long, 1990, 2001).

The second perspective of power is drawn from the Marxist theorisation of the political economy where capitalism is critically used as a case (Blaikie, 1985; Blaikie & Brookfield, 1987). Here, the understanding and analysis of power are centred on class relations between capitalists and producers or labours often supported by the state (eg. Colchester, 1994), sometimes with "deafening silence" (Bryant & Bailey, 1997, p. 35) or silent violence[12] (Watts, 1983), and how power is consistently produced by these relations (Isaac, 1987; Robbins, 2012; Benjaminsen & Svarstad, 2021). Within these relations, capitalists focus more on accumulating wealth to the detriment of producers because they excessively exploit their labour and even their natural resources (eg. Denslow & Padoch, 1988). The inequalities produced by this relation, and human agency or power are persistently (re)produced, constrained and entrenched by historically established social structures (Bernstein, 2010; Robbins, 2012; Malm, 2018; Benjaminsen & Svarstad, 2021).

However, most studies find that state and existing local social structures do not always support capitalists' powers or instruments. Capitalist powers could be resisted or constrained by the state and existing social structures (Polanyi, 1944, 1957; Bryant &

[12] Also structural violence (Galtung, 1969, 1996; Gupta, 2005; Pieterse, 2010; Gupta, 2012), political silencing and acquiescence (Mathiesen, 2005) and structural silence (Acey, 2019).

Bailey, 1997; Lacher, 1999; Dale, 2010). But in some cases, capitalists could overcome or influence dominant state powers, policies and social structures (Lohmann, 1996; Kneen, 2002; Dicken, 2007; Robbins, 2012). Political ecologists analyse this power with the Marxist lens by identifying and examining what relation exists often between the state, transnational corporations, multinational institutions, NGOs and land managers and how power is distributed by this relation mostly across such multiple inter-relational scales (Watts, 1983; Blaikie, 1985; Blaikie & Brookfield, 1987; Bryant & Bailey, 1997; Isaac, 1987; Wisner, 2015).

The third, poststructuralist looks at power through the Foucauldian concepts of discursive power, governmentality and biopower. Foucauldian political ecologists see power being exercised when corporations, government institutions, NGOs and other powerful actors influence actions and behaviours of others by producing and using new or dominant discourses and narratives[13] (Leach & Mearns, 1996; Bassett & Zuéli, 2000; Stott & Sullivan, 2000; Adger et al., 2001; Peet & Watts, 2004; Forsyth & Walker, 2008). For instance, a government can control the actions of subjects by shaping access to information or knowledge through the media, education and training (Svarstad et al., 2018). Scholars who rely on the concept of governmentality analyse power in terms of how governments govern or influence citizens to act in line with their interests and priorities through disciplining tools like social norms and ethical standards; and through truth-defining principles like religion. Power in the context of governmentality may also be exercised through neoliberal measures where incentives are structured to achieve specific results often accompanied with defined rules and sanctions (Foucault, 1991; Agrawal, 2005; Li, 2007; Foucault et al., 2008; Fletcher, 2010; Bose et al., 2012; Johnsen & Benjaminsen, 2017). With respect to biopower, power is exercised by governments to guarantee or secure the lives of the citizenry which could have consequential impacts thereafter (Foucault et al., 2008).

This thesis follows political ecology's focus on power and its relational effects that relate with the three power perspectives. It is important to note that the three perspectives of power are interlinked (Svarstad et al., 2018). For instance, the actor-

[13] Other scholars have provided similar perspectives on discourses: (Gramsci, 1975; Said, 1978; Lukes, 2005).

oriented perspective is an extension of Marxist way of reading power (Jeffrey & Lerche, 2000; Jeffrey, 2001), while power from the poststructuralist viewpoints invoke some power aspect of the actor oriented. Drawing on the above power perspectives, I define power as any form of "resource" (whether institutional, political, economic, relational, social or environmental) mobilised (un)consciously through a range of mechanisms or processes by different actors to pursue or influence a particular course of action to achieve specific outcomes. In the next section, I explain how power is conceived in the commodity chain literature and how it is linked with the concept of power in the field of political ecology.

2.1.2. The conceptualisation of power in commodity chain literature

This thesis is concerned with power and its relational effects on socio-ecological outcomes in the cocoa supply chain. It is therefore worth engaging and providing a fundamental background for the conceptualisation of power in commodity chain literature and how it connects with the preceding definition of power in political ecology literature. Scholars of global commodity chain (GCC), global value chain (GVC) and global production networks (GPN) have defined and discussed the effects of power in the global political economy diversely.

In the commodity chain literature, power is notably conceived as the relationship between chain actors (vertical relationship), and also between chain and non-chain actors (horizontal relationship or networks) which shape the production, distribution and consumption of products. These power relations among actors affect the social, economic and environmental dimensions of products' value chain (Gereffi, 1994, 1995; Gereffi & Korzeniewicz, 1994). Building on this, Henderson et al. (2002) provided various forms of power within the global production networks. The first is corporate power which they referred to as the ability of firms to influence decisions and resource allocation of other actors (firms) in the production network based on their market interests. This concept of power also means that lead firms do not always have absolute corporate power because lesser firms often have sufficient power to exercise control and production strategies. Secondly, corporate power may be enabled or constrained by institutional power. Here, institutional power is construed as the ability of national and local states, regional bodies (like the European Union) and international

organisation like the World Trade Organisation (WTO), International Monetary Fund (IMF), International Labour Organisation (ILO), etc. to influence the investment and decisions of transnational companies. Thirdly, collective agents such as trade unions, employers associations, NGOs, etc. could exercise collective power to influence companies, states and international organisation like the WTO and IMF (Henderson et al., 2002).

Similar to the above, Dallas et al., (2017), argued that power in commodity chain has two dimensions which include arena of actors and transmission mechanisms. With the first, power is exercised in dyads and collectives. This resonates with that of Henderson et al. (2002) where the conceptualisation of power is advanced beyond corporate power—the dyadic relational between lead firms and suppliers—to include power exercised by institutions, state and other institutionalised collectives (Gereffi et al., 2005; Dallas et al., 2017). The transmission mechanisms involve the means where an actor or collectives exercise(s) *direct* influence over other actors or groups. Here, actors know each other. "Their actions are intentional and goal-oriented, specific actors possess power and the tools and methods of exerting it" (Dallas et al., 2017, p. 3). This direct means of exercising power is more formal and may be specific. Associated with the transmission mechanisms is a *diffuse* form of power, where power is unintentionally exercised often producing unintended but significant outcomes. Here, the actors or collectives and the means through which the power is expressed are less known. Sometimes the power that is being exercised may be outside the jurisdiction of the operating actor or collectives (Dallas et al., 2017).

Hughes et al. (2014) used relational approach to discuss power as operating from and embedding in diverse spatial scales i.e., global, regional, national and local levels within the global economy. They stressed that there is transformative capacity of relations between actors, structures and processes at global-local levels to produce particular outcomes in specific places (Hughes et al., 2014, p. 6) Using Fairtrade standard as a case, they emphasised that power is often understood as the relationship between global North and global South countries in Fairtrade Labelling Organisation (FLO) standard setting, with some global South countries now having the ability to re-articulate or reshape Fairtrade's standards to meet their national economic and political interest. This power relationship regarding Fairtrade's standards and policies at different spatial scales can potentially produce outcomes and challenges at specified

local context as the case of local raisin production landscape in South Africa (Hughes et al., 2014).

Moreover, power in the global economy is often understood in terms of how global value chain (GVC) is organised to enable corporate bodies harness and perpetuate global asymmetries of market power for the purpose of generating and capturing profit. Such discussion of power is often used to understand production and trends of inequity in global political economy (Phillips, 2017). However, Phillips (2017) conceived that power in and around GVC consists of three interrelated asymmetries, which include asymmetries of market power, asymmetries of social power and asymmetries of political power. He defined asymmetries of market power as differential position of firms (and persistent competition) in GVC which enable lead firms to control production and appropriate value. The asymmetries of social power refer to the wider patterns of poverty, wealth and inequality in societies around which the GVC is founded and organised. Actors within the GVC mobilise this social power to reinforce these patterns. The asymmetries of political power are understood as the wider political forces that shaped how GVC is governed. This depicts conflicting political interests influencing the governance of GVC as a result of certain social circumstances at the global, regional, national and local scales. For instance, there is skewed political and bargaining power between government of developing countries and transnational firms. This unequal power relation sometimes in the form of bilateral investment treaties limit the production, regulatory and enforcement cost for the operation of transnational companies. Thus, transnational companies often influence the governance of the GVC whether through representatives in parliament, bilateral agreement, through international organisations so that they can succeed in implementing their business model (Phillips, 2017). These power asymmetries interact to produce patterns of socio-economic inequalities (Phillips, 2017).

The above conceptualisation of power in the commodity chain literature generally shares some similarities with the understanding of power in the political ecology literature. Both literatures conceive power as relational where some actors such as individuals, producers, states, firms, organisation exercise influences through structures, processes and other means to produce outcomes. This common understanding of power is what this thesis will deploy. With respect to the Ghanaian cocoa sector and the certification scheme, my focus is on the power relations between

the state, chocolate firms and the farmers, and the associated socio-environmental effects (or transformation). In this thesis, I approach and analyse power by drawing on multiple conceptual tools. I am concerned with how and what power is exercised by the aforementioned actors, through what mechanisms and what outcomes are produced. Of note, while political ecologists intentionally or unintentionally align their analysis of power along one of the above perspectives, it is often evident that the three perspectives are married together most times unknowingly in their empirical analysis (Svarstad et al., 2018). Similarly, my analysis follows the same pattern despite choosing different conceptual tools. I also wish to maintain that in consonance with the field of political ecology, it is not my intention to just analyse socio-ecological changes as products of state, firm and farmers power relationships. Instead, my focus is to expose the challenges, or the flaws associated with these relations for sustainable and equitable approaches while maintaining and improving on the positive impacts that emerge from the certification programmes (cf.Robbins, 2012). I present below the four conceptual tools used to analyse power exercised in the operation of a certification programme, and its implications for socio-ecological transformation in Ghana's cocoa sector.

2.1.3. Governance and new peasantries

In this thesis, I draw on the concept of governance in the field of political economy (and also, complemented with the idea of "new peasantries" from the neo-Chayanovian perspective) to analyse the first research question[14].

The concept of governance has appeared and continues to appear many times in political ecology studies (Robbins, 2012; Benjaminsen & Svarstad, 2021). The fundamental reason is because power as the object or subject of interest in political ecology is expressed through governance instruments and processes. Political ecologists have long looked at how human-environment relations are governed (globally, regionally, nationally or locally) and how unequal power relations in the

[14] How does a private sector firm govern or embed on rural cocoa communities with its certification scheme to influence local agrarian context?

governance process affect these relations (Bryant, 2015). Governance issues are often discussed in connexion with the use and management of natural resources in colonial and postcolonial times. For instance, Nancy Lee Peluso and Peter Vandergeest examine how post-colonial practice of forestry are built on colonial governance system that involves and affects different group of local and non-local actors (Vandergeest & Peluso, 2015).

However, the concept of governance is more theorised and applied in other fields such as political science, sociology—but often aligned with the subfields of political economy—than in political ecology. It is mostly used to understand and discuss the changes in the nature and the role of the state, often in relation to intergovernmental bodies, regional institutions, civil society groups, corporate entities and local grassroot mobilisations regarding different aspect of human society (Jessop, 1998; Bevir, 2008, 2013). For instance, Mark Bevir (2008, p. 3) argues, "governance expresses widespread belief that the state increasingly depends on other organisations to secure its intentions and deliver its policies." While Bob Jessop (1997) defines governance as an act or art of steering beyond the state—but it does not completely exclude the state—which involves the processes of reciprocal interdependency such as participation, coordination and cooperation among diverse multiple actors to realise diverse objectives. Thus, it is a concept or term that describes the greater reliance on the markets and networks rather than the hierarchical bureaucracy of the state in the delivery of services (Bevir, 2008, 2013).

Most political ecologists approach social and environmental issues from governance perspectives by recognising the influences of the state and other actors (Gupta, 2005, 2012). For instance, there has been increasing attention to neoliberal market and environmental governance often through the Foucauldian lenses, that focus on the act and effects of governing in terms of how the powers of private actors, state and local people govern, shape and resist governance processes associated with the environment (Fletcher, 2010; Hall et al., 2015). Currently, there is an increasing interest among political ecologists on governance of the supply chain of high value tropical commodities like coffee, cocoa, soya beans, tea, vanilla, etc. through sustainability and certification schemes (Neimark et al., 2016; Neimark et al., 2019). The interest also includes how governance of the supply chain of these commodities produces socio-economic effects. For instance, the scholars mostly conceive and discuss governance,

its application and effects on labour along commodity chain (Barrientos et al., 2013; Barrientos, 2013; Barrientos, 2014a, 2014b; Neimark et al., 2019a; Neimark et al., 2019b). Their understanding of and arguments on the governance of a commodity chain are linked to the field of political economy. The first research question of this thesis follows this current interest on governance.

The concept of governance has been mobilised both theoretically and empirically over the years in political economic studies of power relations and their associated distributional effects along the global value chains (Gibbon et al., 2008). These theorisations and empirical discussions on governance have some connections with the aforementioned definition of governance formulated by Mark Bevir (2008, 2013) and Bob Jessop (1997). In the context of political economy and global value chain research, governance is understood as how global and regional economic institutions like WTO, IMF, World Bank and G-8 influence regional and national rule and institutional systems (Ponte & Sturgeon, 2014). Others approach governance in a more radical form by focusing on the transnational corporations and the global economic institutions relationships that produce favourable rules for capital accumulation (Gibbon et al., 2008). Some studies also approach governance with focus on the powerful roles of firms or transnational companies (sometimes in partnership with civil society groups and the state) over all other chain participants in shaping social, economic and environmental dimensions of a commodity chain (Gereffi, 1994; Kaplinsky, 2000). Governance of the value chain is moreover approached and understood in terms of different forms of coordination between buyers and suppliers (Gibbon & Ponte, 2008).

With regards to the latter, the understanding of governance places more emphasis on the coordination of continuous or geographically fragmented value chain activities such as production, marketing, assembling and distribution of products by firms (Gereffi et al., 2005). This may involve the coordination of the activities between chain and non-chain actors. Global buyers or firms such as retailers, marketers, and traders could drive global commodity chain by coordinating supply chain activities to create highly competent supply-base. Often, they exercise control over spatially distanced value chains even when they do not own them. More so, through networks, producers too could promote and shape cross-border industrial organisation (Gereffi et al., 2005).

Drawing on coordination and network of value chain activities, Gereffi et al. (2005) identify five types of value chain governance which include market, modular, relational, captive and hierarchy. Market value chain governance refers to a situation where transactions are easily codified or organised and specification of products are made simple and transmittable which enable suppliers to produce the specified products with little inputs from the buyers. Buyers often respond to this specification and the market prices imposed by the seller/producer. With respect to market value chain governance, information being exchanged is less complex and hence, transactions can be governed with little or no formal coordination and cooperation. Both buyers and producers can switch to new partners because the cost of switching is low. Buyers are less motivated to exercise control in the production. They could set and provide few or no standards and information for producers with regards to what they want or how producers should produce (Gereffi et al., 2005).

With respect to the modular value chain governance, suppliers/producers produce, and supply products based on the specifications of the customers or the buyers (Gereffi et al., 2005). Due to the market power of the buyers, they can set stricter and preferred market standards and make sure producers comply with those standards, often through monitoring and control. Buyers do not take the risk, they shift it to the suppliers (Ponte, 2008b). Suppliers take full responsibility of the production and supply of the products by using combination of technologies and ideas. For instance, flower producers in Kenya reacted—to retailers' shifting of unwanted activities—by integrating vertically and upgrading their products to meet the market specifications to acquire downstream functional logistics (Ponte, 2008b). Here, the relationship between the buyer and the supplier can be very complex. There is often substantial information flow or exchanges among actors in the chain (Gereffi et al., 2005).

Relational value chain governance occurs when there are dense interactions between buyers and suppliers, the associated exchange of information and knowledge and provision of services are based on mutual reliance shaped by reputation, proximity (both social and spatial), cultural preferences, family and ethnic connections etc. With this type of value chain governance, knowledge is not easily codified and transmitted. Here, the buyer or the lead firm still exercises more control over the supplier with regards to how much and how a product should be produced (Gereffi et al., 2008).

Captive value chain governance is when small suppliers become more dependent on much larger buyers. Here buyers exercise great amount of power, control and monitoring over the activities of the suppliers. There are tight or thick linkages between the suppliers and buyers. There is also asymmetrical power relationship between the buyers and suppliers. As a result of this, buyers ensure that suppliers meet their preferred and mandatory conditions. Lead firms or buyers are more interested in taking the initiative to upgrade how and what their suppliers produce. Their capability in areas of product and process upgrading of their suppliers does not influence their core competence. Upgrading is often undertaken so that it will benefit the firms or buyers themselves. With captive value chain governance, suppliers suffer high cost of switching to different buyers, but the value chain is governed in such manner to ensure that there is equity and fair treatment for suppliers (Gereffi et al., 2005).

Hierarchical value chain governance involves vertical integration of suppliers, subsidiaries and other affiliates into buyers' organisational structures. It is often characterised with dominating managerial control and relations between managers and subordinates, or the companies' headquarters and subsidiaries (Gereffi et al., 2005).

The level of coordination, exercise of power and control, exchange of knowledge, quality of products and codification of transaction vary among the various types of governance (Gereffi et al., 2005; Gibbon & Ponte, 2008). Approaches to value chain governance also reflect distribution of firms' attributes along the chain such as access to capital, technologies and marketing brands. The approaches furthermore reflect allocation of functional activities, profits and other benefits for participants along the chain (Gibbon and Ponte 2008).

Based on the above conceptualisation of governance in the global value chain, Ponte and Sturgeon (2014) summarise governance in the global value chain as *driving* of value chain activities by lead firms (Gereffi 1994), *linking* i.e., facilitating linkages along the chain (Gereffi et al., 2005) and *normalising* which implies the process of re-aligning a given practice to meet specified standards or norms (Gibbon et al., 2008). In sum,

> "governance in global value chain is the process of organising activities with the purpose of achieving a certain functional division of labour along the chain—resulting in specific

> allocations of resources and distribution of gains. Governance is about defining the terms of chain membership, incorporating/excluding other actors accordingly and allocating to them value-adding activities that lead agents do not wish to perform. Rules and conditions of participation are the key operational mechanisms of governance" (Ponte & Gibbon, 2005, p. 3).

The analysis of value chain governance needs to be accompanied with the concept of **embeddedness**. Thus, while paying attention to corporate power and asymmetries, the level of coordination, exchanges of information and distribution of gains, it is equally important to account for the institutional and territorial context upon which the value chain governance arrangement are embedded (Henderson et al., 2002). Embeddedness could occur in both non-market and market societies (Polanyi, 1944; Granovetter, 1985). I mostly make reference to the term embeddedness to imply the degree to which value chain governance arrangement is constrained by contextual institutions and realities. It is assumed that all economic activities depend on the social context in which they take place (Granovetter, 1985). As a result, most lead firms establish strong relational social bond with local communities built on trust and reputation (Fengru & Guitang, 2018) so as to coordinate value chain activities.

In this thesis, I approach the first research question with the governance lens in line with studies that focus on how transnational companies shape social, economic and environmental dimensions of a commodity chain. Here, I focus on how a firm governs a cocoa commodity landscape with its certification programme. Governance associated with firms involves "patterns of authority and power relations which structure the parameters under which producers/suppliers operate, including what is produced, how and when it is produced, how much is produced and at what price (Humphrey & Schmitz, 2001, p. 4). This firm-centred definition of governance emphasises on the control and the influence of firms through external institutionalised production rules or norms along a commodity chain. However, it does raise questions about the power of firms in relation to the state in shaping local economies. In the highly state-controlled Ghanaian cocoa sector, I am provoked by similar questions: Do firms have powers to govern rural cocoa economies more adequately despite state dominance? How do they do it, and what effect does it have on local agrarian context? Does it change local institutional rules, norms, values and practices?

The aforementioned questions, especially the latter two, lead me to reflect and draw on neo-Chayanovian scholars' conceptualisation of the new peasant economy. Thus, in an attempt to understand the effect of a firm's governance on the peasant economy through its certification scheme, it is equally important to draw on what scholars in peasant studies (notably Jan Douwe van der Ploeg) say about or conceive of the current relationship between peasants, firms and the state. Jan Douwevan der Ploeg (2009, 2018) conceptualises with comprehensive empirical case studies the state of peasants' economy, their social and political lives in the contemporary capitalists' relationships and globalisation processes. According to him, the current peasant situation involves processes which enable peasants to gain institutional autonomy that reduces their dependency on the state and also, help them from being marginalised. One such process is the establishment of territorial cooperative with new forms rules and with democratic principles such as transparency and accountability. He indicated that while such attainment of self-government from state control is necessary to overcome both agricultural and environmental crises, it still recreates new forms of peasant relations with the market or capitalists. Certainly, this new peasant institutional configuration induces change in the peasant economy, but it does not totally change all the attributes of peasants. This thesis (with respect to the first research question) analyses whether indeed firm-led governance shapes local rural cocoa peasant attributes. I stress here that since peasant conditions are so diverse and complex, I focus on the peasants' local institutional forms such as the local branches of state organisations, chieftaincy roles, and the rules, customs and norms of the agrarian society. I first use governance as a conceptual guide or entry point into understanding the current state of peasant attributes as a result of firm-led certification scheme.

2.1.4. Social relation of production

The third research question[15] will draw on Chayanovian and Neo-Chayanovian scholars' ideas of peasant social relation of production (Chayanov, 1986; Ellis, 1993;

[15] To what extent does the scheme consider local social relations of cocoa farming in the rural communities, and what is its effect on farmers' livelihood security?

van der Ploeg, 2009). Social relation of production is generally understood as relations of ownership (who owns what), labour practices (who does what), benefit distribution (who gets what) and processes of usage or consumption (what do they do with it) (Bernstein, 2010, pp. 22–23). Frank Ellis (1993) refers to it as a socio-economic situation whereby different groups of people have access to productive resources and control what they produce in the society. This is a Marxian concept in political economy, and it is often applied to understand and explain the contradictions in the capitalist economy with the focus on the relations between capitalists and producers or labours (proletariats) where capitalists appropriate, own, control the means of production including labour for persistent accumulation of wealth or property (Ellis, 1993; Harvey, 2005).

The concept of social relation of production is also applied to understand the "status and future of peasant farm production" as peasant economy has become more dependent on or integrated with capitalists' market for the continuous supply of produce (van der Ploeg, 2009, 2013). Such integration and market dependency enable capitalists to use market instruments to control labour practices of peasants (van der Ploeg, 2009, 2013). This often leads to or intensifies the formation of social classes such as capitalist farmers and rural wage labours in peasant communities (Bryant, 2015; Bryant & Bailey, 1997).

Social relation of production is also used to describe and analyse the ownership, control and access to benefits particularly in the peasant economy. In peasant settings, some actors own lands or farm fields while others are employed as labourers. This can occur within household units or among rural dwellers (Chayanov, 1986). There is also the tendency where peasants' means of production such as land are appropriated by capitalists with the help of the state leading to a situation where landless peasants become the labourers of capitalists (Li, 2010; Corson, 2011; Kelly, 2011; Benjaminsen & Bryceson, 2012; Mingay, 2014).

Whether in capitalist or peasant context, social relation of production describes class societies, which consist of those who apply their labour to production and those who own the means of production. It drives on the idea that in different societies, and in different historical times there are dominant ways in which people relate in order to

produce. However, these forms of relations among classes often produce inequalities and dispossession of property and livelihoods (Ellis, 1993).

With the third research question, I am concerned with the social relation of production within the peasant economy and its connexion with the capitalist market. I seek to understand how as cocoa farmers have become entangled with firms' new market relations in Ghana's cocoa sector, what form of social relation of production still exists in cocoa farming communities, does it produce inequalities and dispossession of peasants' property, labour or livelihoods, and why?

2.1.5. Chain of explanation

The fourth research question concerns the ecological transition in smallholder cocoa fields in Ghana. This is analysed and explained using the traditional political ecology framework of the chain of explanation. This explanatory or analytical tool has undergone a turbulence of rejection and acceptance (between 1992-2000s) since its introduction by Blaikie & Brookfield (1987). It still remains a powerful tool in the field of political ecology in understanding the power dimension of socio-ecological problems of our time (Robbins & Bishop, 2008).

The chain of explanation developed by Piers Blaikie and Harold Brookfield in 1987 was inspired by Andrew Vayda's (1983) concept of progressive contextualisation (in the field of human ecology) which he introduced to explain and understand human-environment interactions that often cause environmental problems. He proposed that the people's relationship with their environment could be explained "by placing them within progressively wider or denser contexts" (Vayda, 1983, p. 265). For example, according to him, drivers of deforestation can be understood by first describing the specific activities of deforestation such as timber cutting undertaken by the immediate local people in a specific period of time, and then tracing the causes and effects of these activities in wider contexts (Vayda, 1983, p. 266). However, progressive contextualisation is claimed to be theoretically weak to address why certain socio-ecological outcomes are persistent in human ecology. It ignores power as a key element in explaining the causes of environmental change (Robbins, 2012; Benjaminsen & Svarstad, 2021). Paul Robbins contends that new critical theoretical and conceptual tools are needed to address the dynamic "interactions between state institutions,

coercive social relationships, commodity markets, subsistence, and natural resources" rather than longer list of causes often associated with the progressive contextualisation (Robbins, 2012, p. 46).

Following the similar idea of Andrew Vayda (1983), Blaikie & Brookfield (1987) introduced the chain of explanation to identify and explain the causes and effects of environmental change (Vayda, 1983; Blaikie & Brookfield, 1987; Robbins, 2012; Benjaminsen & Svarstad, 2021). Blaikie & Brookfield (1987) approached environmental problems from the Marxian perspective. They studied and explained land degradation in the global South by placing the immediate local land managers and their land use activities in the context of the political economy. Their study showed that the power relations that characterised the political economy such as relations between local producers, local or regional institutions, state, transnational firms and international institutions (Robbins, 2012) combined with ecological forces to influence land use decisions of land managers to cause land degradation. They proposed that the chain of explanation provides a critical tool to study and explain environmental change as a product of power relations located at multiple scales within the wider political economy.

The application of the chain of explanation involves the study and explanation of the land use practises of smallholders or land managers, why they use the land in a particular way, and the forces or conditions (most essentially produced by power relations) that influence their land use activities. These forces are traced from the immediate locality of the smallholders (e.g. their relationships with each other, other land users and group in a society that affect their land use practises) to more distant regional, national and global scales (Blaikie & Brookfield, 1987; Rangan & Kull, 2009; Robbins, 2012; Benjaminsen & Svarstad, 2021). Such explanatory approaches consider power(s) as linear or rigid hierarchies operating from one scale to effect change or produced outcomes in another scale (Rangan & Kull, 2009). However, in reality power may operate in different directions as a web of relation (Rocheleau, 2008; Benjaminsen & Svarstad, 2021).

Many scholars have used and applied the chain of explanation to understand the processes of environmental transformation such as depletion of natural resources like forest, wildlife and marine ecosystems (Adams & Hutton, 2007; Robbins, 2012; Mariki

et al., 2015). Other are also concerned with how environmental conflicts arise as a result of state and transnational colonisation of nature based on external conservation ideologies (Dowie, 2011; Sullivan, 2013; Cavanagh & Benjaminsen, 2014; Bergius et al., 2020) Recently, some political ecologists have applied the chain of explanation to explain the processes or drivers of ecological transformation in high value tropical crop production systems such as coffee (Robbins et al., 2015, 2020; Willis & Johnson, 2020). These recent political ecology studies provide an analysis of the state of biodiversity conservation on farms by linking on-farm tree species or animal diversity to farmers' land and labour choices, and political and institutional context.

I follow and contribute to these recent trends of studies by applying the chain of explanation to ecological transitions or the absence and maintenance of shaded tree species in cocoa farms under an ongoing firm-led certification scheme in Ghana. My focus is to similarly link the ecological transitions in cocoa farms to cocoa farmers' land and labour choices or decisions, and political and institutional context in Ghana. Through this, I unpack the enablers and impediments that shape the potentials of a firm-led certification scheme to facilitate conservation process and achieve the zero deforestation in cocoa production systems.

2.2. Acknowledging sustainability transition literature

This thesis leans on the field of political ecology. However, the thesis acknowledges sustainability transition literature specifically, socio-technical transition theory which has had significant influence on sustainability studies in the past decade (Markard & Truffer, 2008). This theoretical field which emphasises on multi-level perspective (MLP) provides a fundamental understanding of how societies, regions, industries and communities transition towards sustainable futures. MLP is proposed by Geels (2002) and it has been used to study the energy, transport and food sectors (Hinrichs, 2014).

MLP conceives that transitions occur as a result of the complex interactions of processes at, and between three interconnected levels. The first is the niche. This is the micro-level where innovation and learning take place. The niche is also where social networks are created by actors such as firms, entrepreneurs, scientists, policy makers, etc. who desire more sustainable transformation of a system alternative to the existing ones. The second, the meso-level, is called the regime. The regime is a cluster of

established conventions, rules and norms that stabilise the system (Kemp, 1994; Geels, 2002, 2011) and guide the use of particular technologies and everyday practices of actors like producers, consumers, workers, scientists, state agencies, business people, social groups, etc. (Lawhon & Murphy, 2012). The rules and practices may be codified or uncodified and may exist within the minds of the actors or unanimously endorsed by the actors (Lawhon & Murphy, 2012). Regime rules may encompass "cognitive routines and shared beliefs, capabilities and competences, lifestyles and user practices, favourable institutional arrangements and regulations, and legally binding contracts" (Geels, 2011, p. 27). The landscape is the external macro-trends such as climate change, earthquakes, droughts, demographic trends, political ideologies, societal values, and macro-economic patterns, and internal macro-trends that pertain to other sectors like energy, health, tourism, etc. that put pressure on the niche and regime and create space for change (Geels, 2011; Gaitán-Cremaschi et al., 2019). MLP emphasises that transition to sustainability will occur where these three levels interact, as well as the processes within them (Geels, 2002). Similarly, sustainability transition in food systems like cocoa would require interaction between technological (agronomic ideas, practices) and non-technological domains (cooperation of actors, rule systems, organisational arrangements) (cf. Gaitán-Cremaschi et al., 2019).

While MLP has been influential in explaining socio-technical transition, some political ecologists like Lawhon & Murphy (2012) and Scoones et al., (2015) have provided critique to MLP. One of the main critiques of MLP is its inability to evaluate how power relations mediate or shape sustainability transition process practically because it focuses too much on technological artefacts. Application of MLP will also end up placing too much focus on elite actors such as firms, researchers, state agencies, scientists, etc. (Lawhon & Murphy, 2012). As a result, analysis of inclusion and exclusion, winners and losers may be challenged. However, Avelino (2017) argued that power has been implicit in transition studies, particularly those associated with MLP. For example, he emphasised that power in MLP is understood as regulative rules, struggles between existing regimes and new niches (Grin et al., 2010), and the agency of actors with differential and conflicting goals and interests (Geels & Schot, 2007). He went on to develop Power in Transition Framework (POINT) which could be deployed to unpack power and its relational effects in transition process (Avelino, 2017).

Certainly, this political ecology thesis acknowledges those implicit and explicit conceptualisations of power in sustainability transition studies. While acknowledging MLP potentials, I still believe political ecology is better suited to understand the influences of power relations on sustainability programmes. This is because unlike MLP, political ecology analysis of power relations can uncover winners and losers and better explain injustice in sustainability transitional processes. Additionally, I would like to say here that the use of the term 'regime' in this thesis does mean I am deploying MLP. Rather it is used to simply refer to and emphasise particular rules, norms, conventions, customs, values and practices in a particular context. For example, in this thesis you will come across *regime rules, values and practices*; *customary and ownership regime*; *labour and land tenureship regime*; and *price regime*.

2.3. Conclusion

In this chapter, I introduced political ecology as this thesis's theoretical approach. I established that the influence of power relation is a very substantive theme in political ecology research. It is for this reason that political ecology is chosen as a suitable approach to examine the core theme of this thesis which is to address the extent to which socio-ecological outcomes in smallholders' cocoa production landscape are shaped by the power relations between the state, farmers and chocolate firms involved in the operations of a certification programme in Ghana's cocoa sector. In line with the tradition of political ecology—which is influenced by diverse school of thoughts, traditions, critical theories, concepts and methods—I draw on four conceptual and analytical tools to address the four research questions of this thesis.

What mediates or binds the conceptual tools together is the power element. Power is an important element in the concept of governance within the political economy. I stressed a firm-centred conceptualisation of governance in the political economy where firms exercise power by controlling and supervising the production and labour practices of suppliers. Often this power involves institutional organisation at the supply chain like farmer cooperative society. This power is also linked to the peasant context with the idea that through the powers of firms, smallholders can gain institutional autonomy and self-government. With this thesis, I seek to address the power dimension and its effects in the operations of certification scheme by a firm through the lens of governance concept. Furthermore, the question of power is

fundamental to the notion of access, which is defined as the ability to obtain benefits from things, institutions or policy interventions. Through the lens of the notion of access, power is addressed by examining how a firm's certification incentives serve as access mechanisms for smallholder cocoa farmers to derive benefits. I also acknowledge that these incentives could diffuse burdens as well. I draw on social relations of production to unpack the various forms of powers such as who owns what, who does what, who gets what. Through these, I aim to uncover how powers are shaped in terms of who loses what, how and why. Subsequently, I unravel the power of misrecognition on the part of a chocolate firm to disregard these unjust social relations of production and conditions that affect the livelihood securities of smallholders but have less influence on the supply of cocoa beans to firms. The chain of explanation tends to focus on power at multiple scales and how it produces relational effects at local environment. Similarly, I seek to analyse the absence and maintenance of shaded trees in cocoa farms and link it to how it is shaped by power relations between the smallholder farmers, the state and market. I do this to understand the potentials of the certification scheme to facilitate conservation or reduce deforestation in cocoa production landscape. In the next section, I introduce and present how these conceptual tools are applied to examine the four research objectives of this thesis.

"Behind the smile for securing an authority to produce more is the market power and its dominating interest"
Picture by Patrick Owusu, fieldwork assistant, 2020

Chapter Three: Governance of certification scheme

3.0. Preface

This chapter focuses on the governance of cocoa certification schemes in the Asunafo-North cocoa-producing communities. I assess the extent to which a chocolate firm inserts its certification programme in rural cocoa producing communities and how it affects their local agrarian institutional forms and labour practices. I draw on the concept of governance in the field of political economy to analyse and organise the findings and discussions in this chapter. This chapter is structured into two major themes. The first deals with how the certification programme in a rural producing region is governed or regulated to control and manage farmers' adoption and compliance of the standards. The second major aspect of this chapter examines the extent to which the local agrarian institutions are shaped by the governance practices of the certification programme. I note here that this assessment of governance does not cover how power and authority in the Fairtrade system play out (i.e., top-level governance of Fairtrade system such as the key bodies and the doctrines/constitutions that embody their conducts and activities like standard setting mechanisms). Rather the focus is on how a company organises smallholders under a Fairtrade certification scheme to influence the existing institutional power dynamics between the state and the farmers, and local agrarian norms and practises. In this chapter, two main arguments are produced. Firstly, firm-led certification programme can change, and at the same time co-opt local agrarian institutions especially in a state-controlled economy like the Ghanaian cocoa sector. This contrasts the narratives about the cocoa wars and state institutional dominance in the cocoa sector. The first leads us to the second argument that, smallholders' relations with the market instruments like the certification programme does not completely transform peasant conditions, rather some attributes are maintained. This new peasant situation in the cocoa economy is the making of the firm's supply chain governance strategies through the certification programme.

Title of the manuscript:

Firm-led certification scheme "powers" local agrarian institutional forms in Ghana's cocoa supply chain

3.1. Abstract

Cocoa being of national importance, has been a state-controlled sector in Ghana since the 1940s. The farmers' main point of contact has been with state's parastatal, Ghana Cocoa Board. There have been various certification programmes in the cocoa sector, since 2000s, some of which are led by chocolate firms. These firm-led certification programmes are aimed to promote sustainable cocoa production, fair prices to farmers and growth of the cocoa economy. This suggests that firms are overcoming institutional barriers to organise and transform how smallholders produce to meet the growing market demands of ethical cocoa. This article is about the power dynamics of firm-led certification programme in the cocoa growing regions in Ghana. It demonstrates how the changes in the institutional power dynamics between state, firms and farmers, is affecting local agrarian institutions and practices. We use a case study from Asunafo-North region of Ghana involving the Mondelez Cocoa Life certification programme. We argue that a firm via a certification programme enables smallholders to obtain an institutional autonomy and hence, reduce their dependence on the state. Additionally, the certification programme co-opts and at the same time replaces some local agrarian institutions and practices in the rural cocoa sector. This paper, however, concludes that while this firm-led governance reduces farmers' dependence on the state, it in turn creates farmer-firm dependency relations, which is less dependable because firms have the liberty to step off anytime despite the global pressure for sustainability management at the supply chain.

Key words: governance, chocolate firms, state power, certification scheme, local institutions

3.2. Introduction

Over the past few year, Ghana and Cote d'Ivoire—the newly formed so-called cocoa "OPEC giants"—have been from time to time engaging in "cocoa wars"[16] [17] with the global chocolate firms. The two countries are asserting their political and economic power over private sector sustainability and certification schemes. While tensions between the state institutions, including the national cocoa boards, and large chocolate firms, such as Hershey and Mars Wrigley, are not uncommon, it seems to have gotten to a point of contention where the ripple effects on smallholders are quite severe. Recently, lack of potential buyers and trading of cocoa beans below the standard market price have caused serious loss of income and stability upstream in the cocoa commodity chain (Almeida & Bassompierre, 2021; Aboa & Angel, 2020; Munshi & Terazono, 2020; Terazono & Munshi, 2020). On the surface, the cocoa wars suggest weakening powers of lead firms and their difficulties in overcoming and shaping institutional barriers to sustainable transformation in a state-controlled cocoa sector through certification schemes (cf. Raynolds et al., 2007; Taylor, 2005; Goodman & Watts, 1994). On the other hand, there is a general premise that firms mostly have the power to organise, order and transform supply chain activities through certification schemes in many countries (Jaffee, 2007; cf. Gereffi, 1994; Gibbon et al., 2008).

This paper produces an empirical analysis of how firm-led certification programme changes the institutional power dynamics between state, firms and farmers, and particularly local agrarian institutions and practices. Our empirical analysis demonstrates that even in a state-controlled economy, such as cocoa, and complex agrarian context, firms can operate to effect some transformation to their benefits (cf. Polanyi, 1944, 1957; Amin, 1998; Dicken & Malmberg, 2001; Yeung, 2005; Gemici, 2008; Coe et al., 2008). Firms initiate this transformation by securing institutional autonomy from the state for the smallholders. These findings relate to dominant studies on global value chain and power that emphasise the influential roles of firms in controlling and regulating the production and labour practices in many producing countries (see for example Gereffi, 1994; Humphrey & Schmitz, 2001; Gibbon et al.,

[16] https://www.bloomberg.com/news/articles/2021-01-20/chocolate-war-leaves-world-s-top-cocoa-producer-stuck- with-beans
[17] https://www.ft.com/content/c7f1268d-b18a-4dc8-a40e-494bebd0d132

2008; Grabs & Ponte, 2019; Ponte, 2019, 2020), despite state's power, reluctance and sometimes lack of support (Ponte, 2008a).

Firstly, the paper argues that the influence of certification programmes is not limited to only production and labour practices, as it is often argued (Raynolds, 2000; Raynolds et al, 2007; Ruben & Fort, 2012; Krauss, 2015) but also certification programmes can affect some agrarian institutional roles and norms. On the other hand, through certification programmes lead firms co-opt local agrarian institutions and practices to effect changes in the production systems of the smallholders. For instance, firms rely on the powerful roles of local chieftaincy systems in many rural communities of Ghana, to organise and recruit thousands of smallholder farmers into its certification programmes. Through this co-option and change, these firms strengthen their market powers and drive their own brand of sustainability transition in the tropical cocoa frontiers (Cashore, 2002; Cooke et al., 2008).

Secondly, the empirical evidence of this paper demonstrates that even with all of the effort put in by firm-certification programme to detangle cocoa farmers from state control, farmers' institutional power relations with the state and some local agrarian institutional forms remain. This resonates with Chayanovian and Neo-Chayanovian theorisation that smallholders maintain some of their multidimensional peasant attributes i.e. the institutional forms of the peasant economy like traditional chieftaincy authority, customs and values that border on land and labour practises (van der Ploeg, 2018; Ellis, 1993; Chayanov, 1986; Robbins et al., 2020). We argue that the maintenance of these peasant attributes is facilitated and governed by firms via certification schemes, which are strategically apt in promoting sustainable cocoa transformation but behind it is to secure market potentials and guarantee the increasing consumers' demands for ethical cocoa.

This paper has two main foci with respect to the transformative effects of certification programme on institutional power and practices. Firstly, the paper deals with how the certification programme influences states' institutional relations with farmers through the establishment of a territorial cooperative. Secondly, it shows the extent to which the programme shapes the locally based agrarian institutional practices such as chieftaincy roles, customs and norms of the agrarian communities as exemplified above.

The paper concludes that some aspects of institutional transformation and integration facilitated by the private sectors' certification scheme promote sustainability in the rural

cocoa economy. This is because the certification programme maintains "good" production and labour practices and displaces what are considered as "bad" ones; it replaces less active state institutions and makes the most reliable ones more useful for the firm and the farmers (cf. Lambin & Thorlakson, 2018; Raynolds, 2000; Raynolds et al., 2007). However, at times it also transforms certain locally embedded and more sustainable land use practises. All these are outcomes of a lead firm exerting considerable amount of power to their advantage (Gereffi & Korzeniewicz, 1994). The paper begins to detail the analysis and discussions by first providing an overview of the concept of governance in political economy studies and the idea of new peasantries. We highlight their analytical dimensions, their connections and specify their purpose in this paper.

3.3. Governance and new peasantries in the global political economy

This paper draws on the concept of governance in the field of political economy and the Neo-Chayanovian idea on the new peasantries (van der Ploeg 2009, 2018) to analyse how a lead firm inserts itself in the local socio-economic terrain to shape state institutional relationship with farmers and their local agrarian institutions. Governance of the supply chain continues to be a significant area of research focus because it is one of the key mechanisms through which lead firms facilitate sustainability in producing regions (Ponte, 2020a). The focus on governance in the cocoa supply chain is driven by the recent growth of private sector certification programmes in Ghana, of which the issue of governance and its effects have received little attention in both academic and policy spheres.

Governance in political economy has been analysed and discussed both theoretically and empirically over the years (Gibbon et al., 2008). Mainstream political economy approaches governance in the context of how global and regional economic institutions like World Trade Organisation, International Monetary Fund, World Bank and G-8 influence regional and national governance systems. Radical political economy approaches governance in terms of how the relationship between transnational corporations and the above-mentioned global economic institutions produce regulations resulting in capital accumulation (Gibbon et al., 2008).

Subsequent studies have rather shifted towards analysing governance as processes of organising and exercising control along a chain by lead firms (Humphrey & Schmitz, 2001; Gereffi, 1994). This firm-centred definition of governance refers to patterns of

authority and power relations which structure the parameters under which actors operate, including what is produced, how and when it is produced, how much is produced and at what price (Humphrey & Schmitz, 2001, p. 4). Thus, lead firms control and regulate the supply and value of commodities by instituting control systems, outlining parameters and establishing structures for enforcement and compliance of these parameters or standards (Humphrey & Schmitz, 2001). An additional focus has been placed on the influential roles of civil society groups in the supply chain who mostly partner with lead firms and state institutions (Krauss, 2015; Krauss & Barrientos, 2021; Odijie, 2018). This paper draws on the "firm-centred conceptualisation of governance" (Gibbon et al., 2008, p. 316) to understand the influence of a firm-led certification programme on farmers'-state relations and their local agrarian institutional forms.

The analysis of firm-led governance tends to underscore the powerful role of firms in driving, coordinating and transforming commodity chain practises into preferred market standardised ones (Gereffi, 1994; Gibbon et al., 2008). Thus, it predominantly reflects buyer-producer relations. Other areas of analysis focus on understanding the encounters of this firm-led governance with local and national institutional contexts mostly in developing countries (Gibbon & Ponte, 2005). This institutionalist perspective of commodity chain governance by lead firms is internally divided. The first perspective argues that national governance systems control or resist capitalist or firm's regulatory systems (Glin et al., 2015). The other perspective argues that firms can adapt to the state-controlled governance systems (Mutersbaugh, 2002, 2005; Neilson & Pritchard, 2011; Dicken, 2015). This paper contributes to this existing institutionalist debate on governance. It challenges the narratives about a state-controlled cocoa economy which is also justified by the new "cocoa wars" in West Africa.

The analysis of the influence of firm-led governance on local institutional forms leads us to appreciate the current peasant conditions which are under transformation by modern global capitalist system (Mollinga, 2011, p. 613; van der Ploeg, 2009). In order to understand this, we draw on the concept of the new peasantries by Jan Douwe van der Ploeg (2009, 2010 and 2018). According to him, the current peasant economy is a transformed one as compared to what is observed by Chayanov (1986), Ellis (1993) and Netting (1993), with peasants maintaining some of their attributes such as land and labour relational practices, norms and values (also in Robbins et al., 2020). This is facilitated by peasants striving for an autonomy through the establishment of territorial cooperatives as an institutional innovation as a result of the state's structural and

market forces to overcome the current agricultural crises such as deforestation, environmental pollution and meeting consumer's preferences (van der Ploeg, 2009). This is also the same in the Ghanaian context where farmer cooperative societies and associations have been established in recent years due to firms' certification programmes as market network alternative to the state for the purpose of producing ethical cocoa in an environmentally sustainable way for global chocolate consumers.

van der Ploeg (2009, p. 23) emphasises that the pursuit for autonomy as in the Ghanaian cocoa sector normally takes place when there is an entrenched dependency relation between farmers and the state, and also when peasants are marginalised and deprived of their labour productive needs and social conditions (Amuzu et al., under review). This follows a similar pattern to what happened in the case of agrarian social movement in Latin America and Europe such as the North Frisian Woodlands in the Netherlands where territorial cooperatives were instituted on the basis of the farmers' grassroot initiative to resist state regulatory schemes that were unfavourable to their livelihood and inadequate to protect nature (van der Ploeg, 2009). Forming territorial cooperative is a form of rural governance usually established and operated with its own regime of rules, values and practices necessary for local self-governance and reduction of dependency relations with the state and market to facilitate rural development and agrarian transition (van der Ploeg, 2009).

Based on the concept of governance, we aim to show how the establishment of farmer cooperative society for the implementation of certification programme by a firm, changes smallholders' relationship with the state, and how it shapes farmers' local agrarian institutions and practices. We relate the governance process of the certification programme with the idea of the "new peasantries" to contribute to the debate about the smallholders' position under the current global capitalist market interventions. The first aspect of this paper forms the empirical part. At the beginning, we show the establishment process of the farmer cooperative society and the regulatory framework of the certification programme in terms of certification standards and its enforcement mechanisms. We stress that these are instituted by firms to claim institutional autonomy for smallholders and transform their production system to meet the emerging market demands. Then, we focus on how the firm-led certification scheme shapes local institutions. The second aspect shows the conceptual discussions in relation with the empirical evidence.

3.4. Study context

The idea for this analysis of firms' influences on state's institutional power dynamic and local institutions date backs to 2018 when the lead author undertook a study visit to the secretariat of a Fairtrade certified farmer cooperative society in Asunafo-North in Ghana. This Farmer organisation was established by Mondelez International Cocoa Life Programme in Asunafo-North Municipality in south-western Ghana. It is officially called Asunafo-North Cocoa Farmers' Cooperative and Marketing Union Limited. This Farmer organisation is very popular in the region. It has a membership of over 5,000 certified farmers in 67 rural communities. The Mondelez Cocoa Life Programme is a multi-stakeholder sustainability initiative established in partnerships with the government, non-government organisations, supply chain partners, cocoa farming organisations, and farming communities. Some of the partners include Barry Callebaut, Cargill, Ecom, Olam Cocoa, Fairtrade International, Care International, Jacobs Foundation, Save the Children, World Vision, Solidaridad, Swissconnect and the Voluntary Service Overseas sustainability initiative. The Cocoa Life Programme was launched in 2012 and it is built on Cadbury Cocoa Partnership founded in 2008.

Tony's Chocholonely later partnered with the Mondelez's Farmer cooperative organisation to implement its child labour sustainability programme. The purpose of the Fairtrade certification scheme for these two programmes is to address unsustainable labour and land use practises in the rural communities of the municipality.

During the study visit, it was observed that the farmer organisation was well organised and was using its new building as their secretariat (Figure 5). The manager of the farmer cooperative society indicated that the Asunafo-North area had been demarcated as a new administrative political region of Ghana (i.e. Ahafo Region), and that the farmer organisation would give the new building to the region as a Regional Administrative Office of Ahafo. The lead author also met the agronomic advisory body of the farmer organisation and was shown a storeroom which housed their standardised inputs. Additionally, there was a nearby model farm, which was used to train farmers, and according to the agronomic expert, many of these have been established in most communities in the region (Figure 6). The agronomic expert displayed several photographs of nurseries for hybrid cocoa seedlings that had been raised and distributed to the certified farmers. He indicated that the raising of cocoa seedlings is a routine practice of the farmer cooperative society. During an input distribution exercise in one village, a chief (also a cocoa farmer) disclosed that cocoa farming and the social

life of farmers in Asunafo-North have changed over recent years because of the formation of the farmer organisation and enforcement of "certain new rules" (in reference to the certification standards).

Figure 5: The new secretariat of the Asunafo-North Municipal Cooperative Cocoa Farmers and Marketing Union Limited

Figure 6: A model cocoa farm in one village (Peprakrom) with a signpost and a hybrid cocoa nursery site raised by the cooperative society.

The initial visit suggested that the firm-led certification scheme (as opposed to NGO or state-led) was having a transformative impact in the region. This is because Ghana's

cocoa sector, unlike other cocoa-producing countries is conventionally controlled by the state, which exercises institutional supply chain regulatory powers such as supervision and enforcement of conventional production and market standards despite being partially liberalised. These powers are exercised through the subsidiaries of the Ghana Cocoa Board. For example, the Cocoa Health and Extension Division (CHED) is conventionally responsible for cocoa agronomic advisory services, hence, has its office located at the municipal capital, Goaso (now Ahafo Regional capital). The Seed and Production Division (SPD) has only one model farm close to the capital. SPD also undertakes mass nursery production of hybrid cocoa seedlings that are subsequently distributed to cocoa farmers by CHED. The CHED and SPD also operate the state's sustainability programmes such as Youth in Cocoa programme, Cocoa Rehabilitation and Replanting programme, Mass spraying programme, Free distribution of hybrid cocoa seedlings, Free delivery of fertiliser programme and Hand pollination programme (Löwe, 2017). There is also the Quality Control Company (QCC), the official cocoa standardisation body located in three strategic areas (e.g. Goaso, Kasapin and Asumura) in the region. It is responsible for standardising the quality of cocoa beans supplied by the producers before they are sold to the lead firms or other potential traders by another subsidiary, Cocoa Marketing Company (CMC).

These state institutions operate alongside locally based institutional forms that facilitate access to land and production strategies or practices. For instance, Chiefs are mostly landlords and custodians of lands particularly in southern Ghana (including the Asunafo-North area), and have been facilitating farmers' access to land for cocoa farming in Ghana since the 1880s (Hill, 1959, 1963; Amanor, 2001, 2010; Hansen & Lund, 2017). Linked to this customary land ownership regime in many rural cocoa growing communities are diverse aspect of land use-related customs, traditions, norms and values that are observed by smallholders (Berry, 1993; Amanor, 2001). Traditional chieftaincy institutions facilitate rural development (Grischow, 2008) and perform functions such as the settlement of disputes, contact places for communal meetings and planning platforms in many communities in rural Ghana (Berry, 1993; Kirst, 2020). Practices among smallholder farmers in rural Ghana include communal or collective labour organisation, exchange of labour and reliance on family labour including children to facilitate production tasks (Hill, 1963; Boas & Huser, 2006; cf. Flachs & Richards, 2018). Dense planting of cocoa seeds or close spacing method in irregular patterns are farmers' common traditional planting technique (Austin, 1996). Matured cocoa fields are often used by the farmers as collateral to procure assets, money and

service debts (Berry, 1993; Amanor, 2001). In the earlier days of cocoa farming, farmers used their returns from cocoa to acquire more lands and build houses in their hometowns (Field, 1943; Hill, 1959, 1961, 1963; Hunter, 1963; Austin, 1987; Wilson, 1990).

Based on the complex local context, our main concern was: how and why did the certification programme become embedded in the rural cocoa producing communities while there are well-established state bodies? What agrarian transformation is taking place and how? To what extent has it shaped local agrarian institutions and practises of farmers?

3.5. Research methods

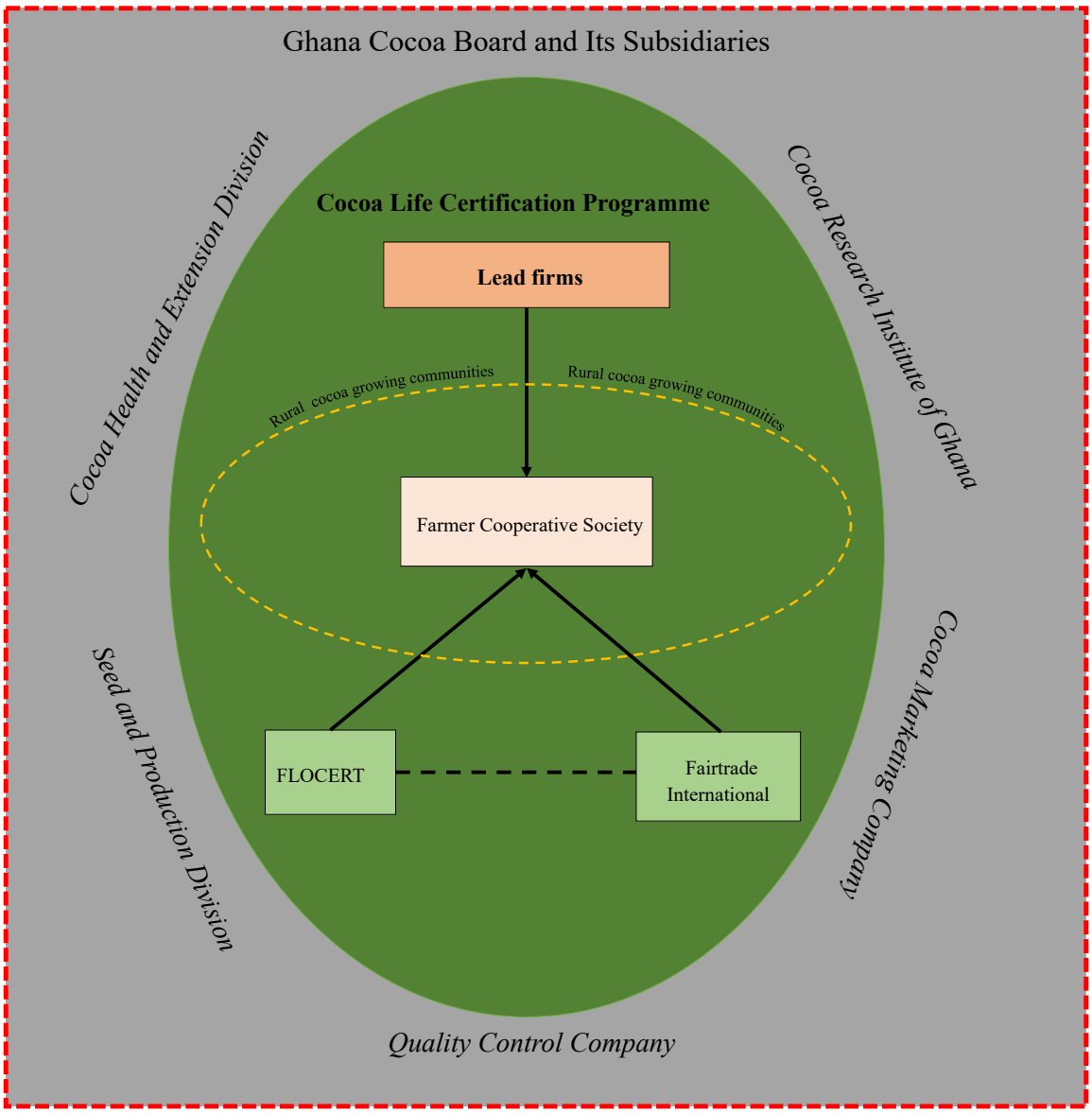
A case study was employed to understand the above questions. Thus, the focus was on the operations of the certification programme and its relationships with smallholders, their institutions, practises and the state bodies (subsidiaries of Ghana Cocoa Board).

Research instruments such as direct field and participant observation, semi-structured interviews (n=23), in-depth interviews (n=11) were employed and conducted in Twi, a Ghanaian local language between 2018 and 2019. Participants included smallholder farmers, executives of the farmer cooperative, an administrator of the cooperative, agronomic experts of the cooperative and officials from Ghana Cocoa Board (COCOBOD). The interviews and observations were undertaken mostly at the houses, offices, cocoa fields and at annual and occasional meetings of the farmer cooperative and the associations. For instance, the lead author partnered with the secretariat of the Farmer Cooperative Union, where he assisted in the distribution of farm inputs, participated in education and training of farmers, community awareness programmes, community meetings, and visited some cocoa farms, demonstration farms and community development project sites. Follow-up interviews were undertaken in 2020 and 2021 via telephone with some experts of Ghana Cocoa Board, and some cooperative workers including some certified cocoa farmers.

The first research task was aimed at exploring how power and authority were structured. How the Farmer cooperative was organised, and its internal structure explored. A focus was also placed on what type of relation existed between the certified farmers, the lead firms, the standard body, the certification agency and the state. Subsequently, the executives and the agronomic experts of the farmer cooperative society were questioned

about the regulatory mechanisms used to control farmers' production and labour practices. Farmers were also asked about their perspectives on these standards and the regulatory mechanisms of the certification programme. Later, an emphasis was placed on the impacts of the certification programme on local institutions (customs, values, norms, lore and practices) using the aforementioned research instruments. Further insights were drawn from officials of CHED, SPD and QCC of COCOBOD using semi-structured interviews. These interviews and observations were undertaken to further understand the shift in governance informed by the initial study visit and how this new governance arrangement has replaced or changed local institutions.

Political and economic context of the Ghana's cocoa sector



Keys/Interpretation:

Actors	Responsibilities
Fairtrade International (standard body)	• Setting certification standards • Communicating certification standards to producers
The Farmer Cooperative Society (Asunafo-North Municipal Cocoa Farmer Cooperative and Marketing Union Limited)	• Organising and registering individual farmers • Coordinating meetings and planning for members • Training and educating farmers on standard practices • Enforcing standard practices • Distributing premium to farmers
FLOCERT (certifying agency)	• Field inspection and auditing on farmers' standard practices
Lead Firms (Mondelez and Tony's Chocolonely)	• Funding of the program • Buying of certified beans from the state • Payment of premium directly to farmers
Ghana Cocoa Board (COCOBOD)	• Issuing and revoking of license to private actors to execute sustainability schemes • Inspecting and grading of cocoa beans • Buying and selling of cocoa beans

Figure 7: Governance structure of the firms' certification programme (in oval green). Bordering it are subsidiaries of Ghana Cocoa Board (the state institution). This is a third-party certification scheme, hence the standard body and the certifying agency are independent actors that operate with no influence from the lead firms.

3.6. Power dynamics between the state and certified farmers

This section shows how a lead firm initiates and establishes its operational control with its certification programme in the rural producing communities of Asunafo-North to change the institutional power relations between the state and the smallholder farmers. It does so through the establishment of territorial cooperative to secure institutional autonomy for the smallholders (Figure 7). Accompanying the certification institution is the outline of production and labour standards, enforcement mechanisms and establishment of production and trade relations with the farmers. We argue that while institutional power relations between the state and the farmers are shaped by the certification programme, the state still maintains its trade relationship with the farmers. Hence, certified cocoa beans produced by the farmers can only be sourced by the firms through the state. Again, the state is still present in the rural communities and can take over from the firm's certification programme any time. However, it can only and adequately replace the firm's certification programme if it executes substantial structural reforms.

The certification programme started in Asunafo-North based on the academic reports produced by University of Sussex about the potential industrial crisis that would befall the firms (particularly Cadbury at that time) in the future because smallholder cocoa farmers in Ghana are inefficient (Sibun, 2008; cf. Robbins, 2012, p. 61). This fear of possible industrial collapse and characterisation of cocoa farmers was based on the increasing decline of cocoa output due to their lack of modern techniques and skills of farming, high rate of poverty and poor labour practices (Sibun, 2008). Alex Cole, the then Director of Corporate Social Responsibility of Cadbury asserted that the main aim of the certification programme is to make cocoa fields and farmers more productive by facilitating farmers acquisition of standardised agronomic skills, inputs and practices to enhance the production of top-quality cocoa beans for the lead firm and the growing alternative chocolate market. The programme also aimed to enhance farmers' access to credit through microfinance, help them develop their entrepreneurial skills to increase their income and promote community development which can attract new and non-cocoa farmers into production (Sibun, 2008). These objectives of the certification programme suggest a transformation of an individual smallholder's production system into an entrepreneurial type of agriculture built on capital and more oriented towards the market (van der Ploeg, 2018), which could be achieved by

instituting a new governance system through partnership with local authorities and non-governmental organisations (Sibun, 2008).

The establishment of the Farmer cooperative society started when CARE International (as a partner of the certification programme) relied on the unifying ability of the chieftaincy institutions in the Asunafo-North. Farmer associations and the Union were organised through the paramount chiefs, the village chiefs and elders. An executive member of the Union indicated that

> "the chiefs are the unifying figures in the various communities. Based on our culture and tradition we need to respect and revere them in our society… I do not think they could have successfully organised the farmers without the chiefs. Most of the chiefs and the elders are also farmers, and even most of the cocoa fields used by farmers are cultivated on customary lands."

Initially, 17 farmer associations were formed. This was possible because the firm obtained an operational permit from the Project Coordinating Unit at Ghana Cocoa Board to interact with farmers and execute its certification programme. According to the manager of the cooperative union, the structure of the Union had to conform to the current Ghanaian legislation on cooperatives. The individual farmer association in each community came together to form a union, which was later registered with the Department of Cooperatives of Ghana in 2010 and formally became a Farmer cooperative society in 2011.

The firm needed to rely on the local chieftaincy authority in order to establish the Farmer association and the cooperative society for the certification programme. Relying on the local chiefs also suggests a way through which the lead firm gains legitimacy from the local people. This allowed the cooperative society to start their activities and operate the certification programme for some time before adapting to the existing formalised structures and processes laid down by the state by registering with the Department of Cooperatives as specified by the Co-operative Societies Decree of 1968 (NLCD 252) and the Cooperative Societies Regulations (L.I. 604). The registration with state's department and the firm's collaboration with the chiefs were done to obtain power for the smallholder farmers to operate and organise their farming activities, and to reduce their reliance on the state. It also enabled the firm to secure operational legitimacy from the state and the chiefs.

Farmer groups or associations that constitute the Union were/are operating as independent associations. Each farmer association has four power structures comprising of the chairperson, the vice-chairperson, the secretary and the treasurer, constituting the executive body, with the rest of the members forming committees around portfolios such as premiums, control, child protection, women's development and environmental protection and management. The same governance structure characterises the union, where representatives of the farmer groups annually elect executive members and committee members for the above-mentioned portfolios. At the formative stage of the union, there were five board members. Currently, the union consists of 67 farmer associations with 9 board members. There is also a management team that coordinates and manages the affairs of the farmer cooperative society. The Union is currently transforming itself into both a production organisation and a marketing company, hence the name Asunafo-North Municipal Cocoa Farmer Cooperative and Marketing Union Limited. The manager revealed that the Union is still in the negotiation and registration process with the Ghana Cocoa Board to become a Licensed Buying Company.

The main responsibility of the Farmer cooperative society is to ensure its members comply with Fairtrade's production and labour standards. This is in a form of production and labour contract relationship between smallholder farmers and the lead firms. The economic reward directly from the lead firms to farmers for compliance with the certification standard is a premium of $240 per metric tonne of certified cocoa beans produced, often delivered not only as a cash bonus but also as agronomic inputs, knowledge acquisition, social amenities and services. The manager of the Farmer cooperative said, "the farmers themselves plan and determine how the premium is diversified and disseminated" as part of the internal organisation requirement of the certification programme.

The agronomic experts of the Farmer organisation provide the smallholders with the knowledge and information on Good Agricultural Practices (GAP) in accordance with Fairtrade production and labour standards. These experts have replaced the Cocoa Health and Extension Division (CHED) of the state in the provision of agronomic advisory services to farmers. This has rendered the supervisory powers of CHED somehow redundant. This is because the private sector technical experts or advisors bring to the farmers, new forms of relations that are considered more efficient, richer

and reliable than agronomic extension officers of CHED. For instance, a farmer narrated that:

> For many years now, we do not see extension officers (referring to the state agronomic experts/advisors). Maybe I do not know whether they come, and I don't see them. But that is not a problem at all because nowadays we had been working with the technical experts of the cooperative. It is easier to work with them, because they have time for everybody, they are ready to address our needs and visit farms for inspection and advice irrespective of the distance.

The new form of technical relation brought about by the certification programme has even reinforced the practical idea from the perspectives of the farmers that the state agronomic institution (CHED) is more distant. CHED cannot adequately meet farmers' agronomic advisory needs because they lack extension officers and logistical support to perform their duties. With the agronomic experts of the Farmer cooperative, farmers can access their services any time they want. In some cases, Mondelez International employ the services of private institutions like Agro Eco-Louis Bolk institute (a private independent consultancy organisation) to train and educate farmers on GAP.

Linked to the GAP, the labour-related sustainability standards outlined for farmers' compliance includes no child labour, no forced or compulsory labour; no discrimination and freedom of association; no discrimination on labour wages and contract; observance of labour safety and health precautions which mostly draw on International Labour Organisation Conventions. The land use or production standards required of farmers, covered environmental protection and farm management practices such as planting and nurturing new and naturally growing native trees; no encroachment on the reserved forest, avoid hunting endangered animals; non-endangered animals must not be hunted at the time when the animals are breeding; avoid pollution of water bodies and the environment; timely application of standardised agrochemical with the prescribed dosage; regularly and timely weeding, pruning and removal of mistletoes and disease pod; learn, practise and adopt the required farm innovations like wide spacing and pegging of cocoa seedlings in a row. Most of these certification standards are illustrated by posters and calendars for farmers to notice and adopt. These standards should enable producers to add value to their products, adopt new techniques and functions, connect them to the new market and enhance their relations with buyers and consumers (Jaffee, 2003; Bolwig et al., 2010). However, these functions can only materialise through enforcement

mechanisms established by the certification programme which the state did not and still does not have.

The compliance and enforcement of the standards are executed through a third-party verification system. FLOCERT is a third-party certifying agency whose auditors inspect and audit the standards compliance behaviours of farmers' responsibilities on a yearly basis. This can be in the form of announced or unannounced inspection and auditing. A specialised process called Child Labour Monitoring & Remediation System (CLMRS) is employed to regulate the no child labour standard. This is mostly done through Community Liaison Person (CLP) who makes an initial detection and notification of child labour. For example, most child labour cases are remediated through the provision of educational materials and scholarships, and enrolment of the child in apprenticeship. It may also include educating and training of the parents or guardian of the "labour child". Also, the parent could be provided with financial and logistical support to engage in alternative economic activities to support the child.

In relation to the state system, there are child labour laws in Ghana such as the Article 28 of 1992 Constitution of Ghana and the Children Act (560) of 1998 of Ghana which set the minimum labour age requirement at 18 years. However, the state does not have such alternative structural measures to enforce the child labour laws in Ghana. The certification programme enables the firms to control labour practices of smallholders to meet consumer preferences.

Associated with the third-party verification is the threat of exclusion and decertification. This occurs when auditors or evaluators submit an audit report about farmers' compliance levels of the standards to the certifying organisations' where decisions about the continuation or decertification are made. At the initial stage, warnings and advice are issued to the farmer who defies or flouts standards. In the event of persistent violations of standards, the culprit is eventually evicted. For example, an executive member of the Farmer cooperative said: "we can't do anything if a member is evicted. It is the responsibility of the member to obey the rules. Even sometimes if a member flouts the rules, we as a group take decision to deregister him/her to avoid any future problems with the auditors." This suggests that the Farmer cooperative has taken up some enforcement power in addition to organisation of farmers. However, in relation to the state's conventional system, there is no punitive

measures or even threat of exclusion from the supply chain. Before the advent of the certification programme, farmers could take or ignore advice from CHED. Farmers' cocoa beans are acceptable at the trading points whether they have taken the advice not, if only they produce the right cocoa grade. With the certification programme membership is voluntary, but adoption of and compliance with standards are mandatory once the farmer register with the Farmer cooperative. Certified farmers could be evicted even before they produce beans. But the firms rely on the Quality Control with respect to the standardisation of quality of cocoa beans and storage of cocoa beans.

Compliance with standards is also indirectly regulated through the incentives such as the certification premium. For instance, a farmer articulated:

> "I joined the association because of the benefits it offers. They give us inputs and extension services…. There are a lot of agrochemicals in the market. And sometimes I am cautious of which one I should buy and use because I had witnessed one farmer almost destroying his farm because of the application of unstandardized agrochemicals. But with this association, you are assured of the right inputs".

Another example is a farmer who indicated that:

> "We have to obey what they tell us because previously we were not getting these helps. Those of us who are farmers and live in the villages were neglected. Nobody cared for our welfare, so if we are asked to follow certain instructions so that we can get more income, why not? Because of this programme, now we have new school building, good drinking water and some of the children in this community receive financial support for their education. Who does not want this?"

This also suggests that the certification programme incentivises smallholders to enable them to adopt and comply with the Fairtrade standards.

Figure 8: Provision of agronomic services to farmers. On the left, a picture showing the distribution of premium (inputs and cash) by a farmer association to its members. On the right is agronomic advisory services on a farm undertaken by a technical expert for some group of certified farmers of a village.

Technical agronomic experts working for the Farmer cooperative society use model farms to show farmers how to practise the designated or standardised land use practises. These practices include integrated crop management, pest and disease control, pruning, budding and grafting, application of inputs, cocoa rehabilitation, pegging of seedlings, tree planting and conservation, soil fertility improvement, etc. An agronomic expert of the farmer cooperative indicated that the farmers themselves volunteered their cocoa fields to be used for model or demonstration farms. For instance, a farmer indicated:

> I was initially scared of losing my young cocoa farm for the field demonstration. Because as a woman I really struggled to nurture the cocoa trees to reach that level of growth. But I was assured that I should not worry, and everything will be fine. I was devastated when they started pruning my farm. I could not withstand it. They were just cutting down the cocoa trees here and there. When I complained they told me that appropriate distance between the cocoa trees is needed to promote air circulation, sunlight penetration and reduce excessive humid environment that causes black pod disease. … Now, I can testify that they did it for my own benefit. Despite my small farm, I can harvest more than 10 bags a year.

According to the agronomic expert of the farmer cooperative, they deliberately promote volunteering of cocoa fields that are very close to the roadside or footpaths for the demonstration so that farmers could easily observe, learn and model their farm along with the demonstration fields. The Seed and Production Division of the state has one model farm in Goaso (now as regional capital). The division also facilitates the state's free distribution of hybrid cocoa seedlings. However, farmers can only access this model farms only when they travel to the capital. Now, model farms are accessible by smallholders because of the certification programme. Since they are less capable to sufficiently meet the needs of farmers in the region, the Farmer cooperative undertakes their own nursery distribution programme with the help of agronomic experts and certified farmers providing land and labour for the programme.

This process of embedding the certification programme in the rural cocoa producing communities is thought by the lead firm to enable a transition of the smallholder's economy into an entrepreneurial type of agriculture that would meet the market preferences of the lead firm. For instance, an officer of Ghana Cocoa Board claimed that

> "lead firms operate certification schemes to maintain their market interest in the cocoa industry. You should note that smallholders always have alternatives. Why is it that industrial partners in the cocoa sector become restless when some farmers decide to go into cashew or oil palm production? They know the implications of those decisions to their business and jobs in Europe and America. It can also affect the Ghanaian economy as well. That is why we also cooperate and allow them to run these certification schemes" (An Interview with Agronomic Expert of Ghana Cocoa Board, 2021).

However, the trading relationship between the lead firms and the farmers is still mediated through the state. That is to say, the lead firms have access to the certified cocoa beans only through the Cocoa Marketing Company (CMC), where the cocoa beans must be inspected and graded by Quality Control Company (QCC) of the state before they are sold. Such production and trade relations of this Fairtrade certification scheme are different from other third-party certification schemes where lead firms have both direct production and market contracts with smallholder producers in developing countries (Hatanaka & Busch, 2008; Otto & Mutersbaugh, 2015). This implies that lead firm has to adapt to a situation where the state still wants to maintain

its institutional relationship with farmers. It also suggests that the certification programme does not assume total autonomy in the cocoa sector.

While the certification programme shapes the institutional power relationship between the state and the farmers, another question is what transformation does it bring to the local economy? In the next section, we will focus on the relationship between the certification programme and local institutions and practises.

3.7. Local agrarian transformation

In Asunafo-North, the Farmer cooperative society has taken over some powerful role of the local chiefs and elders mainly in relation to certified cocoa farmers. Rather than the chiefs, it is now the Farmer cooperative society that settles conflicts that arise between farmers. The manager of the cooperative said: "we are a certified organisation and we abide by certain principles based on Fairtrade standards which tells us to settle disputes among ourselves… This has been the normal practices since we formed this society." A farmer also claimed that

> "whenever there are disputes or problems, the executives always come up with acceptable resolution. It is not about who is guilty or who is not. There were many occasions where disputes ended up in the state district court after they had been adjudicated by the village chiefs and elders because the parties were not happy with the traditional decisions."

However, chiefs certainly retain some essential authorities or powers over land by settling land conflicts (cf. Kirst, 2020; Ubink et al., 2009; Amanor et al., 2008). As the manager affirmed:

> "we do not deal with conflicts over land. Settlement of land disputes are reserved for the chiefs. Issues about lands especially are matters of the chiefs. So, we mostly rely on them when it comes to land matters."

Often, village elders and chiefs are also witnesses to and mediators of local private land deals and transactions in most communities and essentially help in settling disputes when they arise (Subchief of Asumura, 2018 cf. Berry, 1993). The powers over land especially in southern Ghana were granted to chiefs by the colonial administrators to hold lands (especially stool and skin lands) in trust of the local people (Amanor et al., 2008). Recently, within the framework of agrarian reform, chiefs had acquired constitutional powers to administer lands in Ghana (Kirst, 2020; Ubink et al., 2009; Amanor et al., 2008; Whitehead & Tsikata, 2003), making them key actors with respect

to the adjudication of land conflicts. Hence, it is politically and traditionally more suitable for the firm to accept the institutional role of chiefs with respect to land governance in the rural communities. It also means that the traditional authority associated with land in Ghana cannot be replaced by the certification programme. The lead firm only needs to be happy because the chiefs are around to deal with complex land tenure issues. According to the manager, the reliance on the traditional authorities with respect to land issues is also because

> "the same principles of Fairtrade tell us to do things to suit our way of life". This also includes observing the customs and traditions regarding working and non-working days. We get the full participation of farmers for most of our activities especially on traditional non-working days... Various villages have traditional non-working days, and it depends on the taboos, traditions and customs that govern the land whether it is privately owned or customary land. Some are related to the spirituality of the land and streams or river..... Those taboos or customs are often difficult to understand but since they have been part of us for a long time, we need to observe them."

Thus, the only way for the cooperative workers to navigate their relationship with the existing customary practices and tradition is to work alongside them. An attempt to change local institutional practices with respect to land could be resisted by the local farmers and firms may lose their legitimacy and control to continue with their certification programme.

However, the certification programme has shaped the labour practises of the smallholder farmers. A typical case is the farmers who use children for cocoa farming activities such as weeding, fetching of water for the application of agrochemicals, picking and gathering of pods, drying and transporting cocoa beans. The Fairtrade standard requires that no child under any circumstances below the age of 15[18] must engage in any cocoa farming activities. However, the certification programme permits the certified farmers to adopt and comply with the national laws governing Child labour, specifically the Article 28 of 1992 Constitution of Ghana and the Children Act (560) of 1998 of Ghana which set the minimum age requirement at 18 years.

A cooperative worker indicated that farmers did not know anything about national laws on child labour. Farmers used their children to farm cocoa. For instance, a farmer

[18] This labour standard draws on the 1973 ILO Convention's (No. 138) minimum age requirement for work

asserted that "In the earlier days, a man's wealth was the number of children he had, and they used their children as labourers for cultivation. Today it is different……." Through control and enforcement mechanisms such as auditing and Child Labour Monitoring & Remediation System (CLMRS), the certification programme is promoting the farmers' adherence to the national laws on child labour, but in some cases, this becomes difficult. Smallholders are reluctant to comply with these regulations. This is because the new regulation alters household labour choices and places them at risk (cf. Scott, 1976). The reason is that the use of children has been the traditional labour practice of smallholder farmers since the introduction of cocoa in Ghana.

The establishment of the model farms and the agronomic experts of the Farmer cooperative have also enabled certified farmers to learn the agronomic science of cocoa farming, which also facilitates their adoption of new and more sustainable farm management practises. Pruning of cocoa tree branches, removal of mistletoes, weeding and application of agrochemicals are done on time. Cocoa rehabilitation practises are promoted, where farmers are encouraged to remove aged and moribund cocoa trees and replace them with the new hybrid cocoa seedlings. Proper personal and environmental safety measures are adhered to when applying agrochemicals. Farmers are also trained on how to store agrochemicals. In addition to using poultry droppings, most farmers often leave husks of cocoa pods on fields to decompose and replenish the soil. Previously, women were using these husks to produce local soap. Additionally, farmers are trained or educated to approach cocoa farming as a business by investing their income, recording farm management practices, recording the cost of production and returns, analysing gains and losses and diversifying their income into other ventures.

Also, certified farmers are prohibited from leasing their cocoa fields. Lease of either part or entire cocoa fields has been the land relational practices among cocoa farmers in the area. With leases, farmers use their cocoa fields as collateral to secure loans and service debts. According to an executive member of a farmer association:

> "As soon as you mortgage your cocoa fields in exchange of loans or for other matters, you cease to be a member…. Often some of these exchanges result in land disputes, and mostly, they cause confusion when it comes to who should receive the premium. It is something that we do not encourage at all."

According to one elder of a village, the lease (locally known as *awowa*) of cocoa fields has been the normal practice of farmers for many years mostly in times of hardships and emergency. Some farmers still do it especially during the off-season period despite the existence of the cooperative's microfinance facility. An administrator of the farmer cooperative society in response affirmed that,

> "yes, some farmers lease or even sell their fields but this is voluntary association and the only thing do is to evict them…. The fact is that they know we abhor it per our rules…."

Lease of cocoa fields is a form of "survival" for many smallholders (Ploeg, 2009, p. 30; Salazar, 1996). But in the context of Asunafo-North, the certification programme stops farmers from either selling their lands or borrowing money against them.

Additionally, the certification programme has intensified labour practises of smallholder farmers. This is driven by farmers' desire to increase crop yields, obtain higher premium and to avoid eviction. The tensions between farm owner and caretaker have been renewed. Farm owners now regularly inspect the activities of caretakers and their cocoa fields than before. This is to ensure that caretakers follow the right land use standards. It was claimed that even absentee farmers delegate such responsibilities to purchasing clerks or other farm owners. For instance, a farmer indicated:

> "…I have to visit them regularly to ensure that they are doing the right thing. If you don't do that, they will allow weed and pests to colonise your farm and that is not a good practice which the cooperative talks about. Sometimes they concentrate more on farming food crops rather than managing the cocoa fields… I once sacked a caretaker because he had contracted more than two farms in different villages. This made it difficult for him to properly manage my farm."

This tension and intensified labour practise under the certification programme will benefit the state and the farmer but most particularly the firms.

On the contrary, the certification programme has displaced some locally based favourable planting technique of the smallholder farmers. Conventionally, farmers were used to the dense planting technique with cocoa seeds rather than planting the cocoa seedlings using the row and wide spacing method. For instance, one farmer narrated that:

> "this is the knowledge we took from our elders. When you do the close planting of seeds, you are assured of many surviving cocoa plants. Most times many cocoa plants on the fields prevent weeds infestation. The normal practice is that you gradually remove some of the trees as the cocoa plants mature on the field."

Currently, what is promoted and enforced by agronomic experts of the certification programme is the wide-spacing method of planting with seedlings.

An agronomic expert of the Farmer cooperative indicated that the best method is the pegging of cocoa seedlings with reasonable intervals of 10 metres. For example, in the 2019, the farmer cooperative raised and distributed 300,000 hybrid cocoa seedlings to farmers to plant by adopting this new standardised technique. In reference to this new technique, a farmer confessed that the wide spacing is not good for them. He claimed that

> "this new technique is a waste of energy and time. We virtually have bare fields filled with weeds after pegging. Most seedlings do not survive even after weeding several times. But they demand that we stick to this new method."

The adoption of this new technique creates additional labour burden for farmers who rehabilitate their aged cocoa fields and start new cocoa farms.

3.8. Discussion and conclusion

The main purpose of this paper was to show the extent to which a firm-led Fairtrade certification scheme is changing local agrarian institutions, production and labour practices of smallholders in rural producing communities in Ghana. Based on this, two main analytical arguments are produced.

Firstly, we demonstrated that firm-led governance of a supply chain can change the state's relationship with farmers to influence local agrarian institutional forms. The certification programme changed the state-farmer power dynamics through the establishment of the territorial cooperative which has their own organisational power structure and principles. The actions and practises of the cooperative are regulated through certification standards. The certification programme has brought new institutionalised ways of regulating the conducts of smallholders in farming which never existed before to meet both the market and consumer preferences. This relates to the idea that private sector governance through certification programmes has created a market space for embedding ethical values in commodities and strengthening just connections between suppliers and consumers (Mutersbaugh, 2002, 2005). Put differently, firm-led governance provides the mechanisms (through power and authority) of realigning suppliers' production and labour practices in response to changing market demands (Humphrey & Schmitz, 2001; Gereffi, 1994). But, as we have shown, this new institutional power change between the state and farmer became

possible because the state cooperated. This suggests that both state and firms cooperate for common benefits (Glin et al., 2015). This evidence in Ghana is different from other state-dominated sectors that challenges the operations of private sector intervention programme (Raynolds, 2000; Raynolds, Murray, & Wilkinson, 2007; Neilson & Pritchard, 2011). However, the state does not relinquish all its powers. It mediates trade relations between farmers and firms to avoid risks. Thus, even in situations where the market assumes control in state-dominated sectors, the state still muscles its presence. This indicates that a firm-led governance in the supply chain does not mean complete exclusion of states' roles (Gibbon & Ponte, 2005).

Secondly, the transformative effects of the certification programme on local agrarian institutional forms were also shown. We showed that the certification programme used the traditional chieftaincy systems to organise the farmers into the territorial cooperative. This is because the firm acknowledged that the chieftaincy institution is intrinsically linked with the agrarian society. Chiefs facilitate access to land and adjudicate land disputes (cf. Amanor et al., 2008; Berry, 1993). The land used for farming is also characterised with traditions and customs. Chiefs and village elders mostly determine the everyday practices of land users and are traditionally considered as mediators of certain social conflicts among rural producers (Kirst, 2020). However, the certification programme through the executive members of the farmer cooperative society has replaced the traditional authorities over the settlement of disputes among certified farmers. This is a Fairtrade organisational standard that must be complied to. But the Farmer cooperative society tolerates the traditional authority (especially over land and customs) where it cannot be displaced. Working alongside this traditional authority over land disputes enables firms to avoid interference of agrarian land issues and disruption of agrarian traditional norms and practices. Tolerating traditional power and authority over land also relieve the cooperative society the burden of exercising those powers. This again suggests that the firm-led certification programmes could successfully make some changes when irreplaceable contextual actors and their practises (in this case the chiefs, customs and traditions) (Granovetter, 1985; Polanyi, 1944, 1957) are integrated in its operations.

Moreover, while the certification programme takes up some powers and accepts the extant ones, it at the same time attempts to change smallholders' production and labour practices such as the lease of cocoa fields and the close and dense planting

method. These changes are facilitated through the regulatory mechanisms. The change of such production practises like lease of cocoa fields disrupts labour exchanges which is typical of many peasant societies. Our evidence brings to mind the idea that often local social institutionalised relations are displaced by external capital or market rules (Ellis, 1993; Bernstein, 2010), but this is driven by firms' market interests and priorities (Krauss & Krishnan, 2016a; Odijie, 2018). The replacement of the close and dense planting method with wide and row planting method by the certification programme also subsequently creates burdens for smallholders. Such local agrarian knowledge and practises should rather be advanced and integrated (Agrawal, 1995). The certification programme has also intensified tensions between farm owner and caretaker as well as their relational practices. Farm owners need to regularly supervise labourer activities to ensure that the standardised market rules are enforced and complied with. This could lead to increase in crop yields and promote the maintenance of farms' agronomic health. This contrasts the occurrence in some developing countries where external capitalist interventions rather lead to farmer-labour exploitations and fuel intra-household struggle over land and labour, conflicts and even violence (Carney, 1992; 1994; 1988; Li, 2014; Neimark et al., 2019). Additionally, in the process of eliminating child labour through its enforcement mechanisms, the certification programme is promoting the adherence of national laws, which the state is less capable to do.

We conclude with an argument that the firms use certification programmes to govern the supply chain activities of smallholders through the creation of territorial cooperative and regulatory framework. This enables smallholders to obtain institutional autonomy and reduce their dependency on the state. It controls and regulates how smallholders produce the ethical cocoa beans for the lead firm. On the contrary, this also means that the firm-led governance reintroduces and strengthens a new form of dependency relation with the market or firm. This is linked to the idea by van der Ploeg (2009) that the attainment of institutional autonomy through territorial cooperative aligns farmers' production practises to the dictates of the market with new democratic principles and rules.

The above argument and our evidence relate with the current peasant situation in the contemporary capitalist system where changing market forces and political cooperation bring peasants closer to transnational companies. This new market

relation embodies some democratic governance principles such as self-government, accountability and transparency at the supply chain (Jaffee, 2007; Grabs & Ponte, 2019; van der Ploeg, 2009). These principles are fundamentally good for the purpose of just market space and relations (Mutersbaugh, 2005); thus, we can stop worrying about the 'big bad capitalists' and their tendency to override such things. In such situation, consumers can buy certified cocoa products with good conscience because peasants' economy has been justly transformed. The firm's relation with the smallholders is also intended to attract potential producers into the peasant economy while motivating and keeping extant ones in production.

The new producer-firm relation changes some local institutional roles, mode of production and exchanges of peasants (van der Ploeg, 2009). The purpose of producing, labour relation and its supervision has also been intensified. However, the peasants encounter with the capitalist intervention does not change land relations and ownership of land to the capitalist. While some aspects of mode of labour organization are changed, peasants still rely on household labour and community labour. This indicates that peasants maintain some aspect of their character under capitalist intervention. Thus, while peasants being agents that firms rely on to drive changes, their relations with the firms do not lead to the total disappearance of the peasantries (Goodman & Watts, 1994; van der Ploeg, 2018; Robbins et al., 2020). However, the characteristics of peasants are maintained by the firms to keep peasants' dependency relations with the firms so as to exploit market benefits (van der Ploeg, 2009). While this case study shows the current peasant conditions in the global chocolate economy, it also demonstrates that lead firms have the power to facilitate sustainability transition in a state-controlled smallholder cocoa economy.

3.9. Postscript

This chapter showed the institutional power dynamics play out by the firms' certification programme to influence the production and labour practices of smallholder cocoa farmers. I demonstrated the power of lead firms in a state-controlled cocoa sector through the establishment of territorial cooperative and regulatory framework. I drew on the concept of governance to understand firms power relations with the state and smallholder farmers in the cocoa sector of Ghana. It was also used as an entry point to understand the current conditions of smallholders as a

result of the certification scheme. I showed that the state cooperates with firms for the operation of the certification scheme, but the state still tries to maintain some powers to avoid any potential challenges. However, within the context of this institutional establishment, power dynamics and relations, it still remains unknown the actual benefits farmers derive from the certification programme. I address this in the next section.

A six-unit classroom block built by a farmer association of Mondelez Cocoa Life Program at Kasapin with funds through certification premium.
Picture by Patrick Owusu, fieldwork assistant, 2019

Chapter Four: Certification incentives as access mechanisms

4.0. Preface

This chapter is about the benefits (and also the burdens) farmers derive from the certification programme. Through the notion of access, this chapter assesses these by focusing on the certification incentives as access mechanisms through which the benefits and burdens are distributed. I also unpack the state and private sector power relations that embody the certification incentives. The chapter is based on case study research on a Fairtrade certification programme in Asunafo-North cocoa-producing communities. The first aspect of the chapter deals with the certification incentives as access mechanism, while the second aspect analyses how state and firm power relation are bound up with the distributional effects of the certification programme. I found and argue that the incentives of the certification scheme conceal state-farmer relations. However, the private sector incentivisation efforts produce altered and uneven benefits and burdens. The chapter discusses and concludes that while the private sector deploys the incentives to gain operational legitimacy, the state still remains powerful in regulating the supply chain and the operations of Fairtrade certification scheme.

Title of the manuscript:

Bittersweet cocoa: the use of farmer incentives in certification programmes in Ghana as a battleground for legitimacy, authority, benefits, and burdens

4.1. Abstract

Critical studies on the interlinkages of access, power and sustainability in high value tropical commodity systems are gaining traction following the nascent growth in the private sector or market-driven voluntary certification programmes. This article draws on access theory to examine how the distributional effects of a certification programme in rural cocoa growing communities of Ghana is bound up in power relations. The article is based on a qualitative case study approach involving 40 semi-structured interviews, 20 in-depth interviews and field observations conducted between 2018 and 2020. We found that the private sector firm leading the programme deploys certification incentives as access mechanisms that enable smallholder farmers to benefit from cocoa farming. The certification incentives promote farmers' participation in the scheme and fill the responsibility gap left by the state. However, while the private sector incentives obfuscate the state's poor and unsuccessful relations with farmers, they at the same time produce altered and uneven distribution of benefits, production and bureaucratic costs, market leakages, environmental theft, unjust gendered labour relations, enhanced labour workloads and exploitation. We argue that the firm obtains and affirms its operational legitimacy and market relations with smallholder farmers through certification incentives. However, the state exercises control over the firm's certification programmes in order to maintain gains from the cocoa sector. We conclude that a revision of the scheme's bittersweet performance would require market and institutional reforms, and reconsideration of existing structural differences among farmers, and between the state and the market for better sustainable transitions.

Key words: Access theory, power relation, legitimacy, sustainability, smallholder farmers

4.2. Introduction

Cocoa (*Theobroma cacao L.*) is an important commercial crop in the world (Obiri et al., 2007). The beans that are produced from this tree crop have great economic significance to the producing countries in the tropical regions and to chocolate firms largely based in the Europe and North America (Seini, 2002; Gibbon & Ponte, 2005). This tropical crop is cultivated by over 6 million smallholders in over 62 countries (FAIRTRADE, 2016). Ghana and Cote d'Ivoire are the two largest producers and supply about 70 percent of the global cocoa beans (ICCO, 2018). It is estimated that more than 800,000 smallholders produce cocoa beans in Ghana and about 6.3 million Ghanaians depend on the cocoa sector for their livelihoods (Laven, 2011).

The cocoa sector of Ghana is controlled by the state, but in recent decades, the private sector chocolate firms have gained some powers in the supply chain through the operations of their certification programmes (Glin et al., 2015; Odijie, 2018). This recent sectoral development involving the chocolate firms with their certification programmes is driven by the global demands of ethical cocoa from consumers, civil society groups, politicians and the media over the continuous unsustainable practices and conditions such as lower crop yields, incidence of pests and diseases, loss of soil fertility, poverty, poor labour conditions, etc. at the supply chain (Krauss & Krishnan, 2016; Krauss & Barrientos, 2021; Wessel & Quist-Wessel, 2015; Akrofi et al., 2015; Adomako & Adu-Ampomah, 2000; Mahrizal et al., 2014). As of 2017, the total certified cocoa fields in Ghana reached 1,018,482 hectares with 283,266 smallholder farmers. The major certifiers include UTZ, Fairtrade, Rainforest Alliance and Organic cocoa[19] (Willer et al., 2019). Certification programmes led by firms are often based on collective volunteerism of smallholders—usually in the form of farmer's participation in territorial cooperatives—and the promise of incentives by the firms (Laven & Boomsma, 2012; Tayleur et al., 2016). These incentives can include everything from direct payments as premium or synthetic pesticides to school scholarships.

For the past two years, tensions between the state and the private sector over cocoa production in Ghana and Cote d'Ivoire, as played out through conflicts over

[19] www.sustainabilitymap.org/trends

sustainability certification programmes, have been highly mediatised. For instance, in late 2019, an article in Bloomberg titled *Against the tide, cocoa growers plan to suspend ethical programs* stated that the cocoa boards of the two countries threatened to halt all private sustainable certification programmes in attempts to rein in private sector control and to guarantee an increase in premium prices of cocoa produced by smallholders (see also: Dontoh et al., 2019; Bassompierre & Jha, 2019).[20] In order to maintain their relationship with cocoa farmers at the supply chain, some private sector firms responded to the threats by agreeing to the states' demands of an increase in the premium cocoa prices (Mieu, 2020; Nieburg, 2019).

The present article builds on extant studies evaluating the impacts of certification programmes for commodities such as coffee, cocoa, soy, oil palm, etc. in tropical agricultural landscape. We go a step further by investigating the power relations between the state, private sector firms and smallholders as they play out in the distribution of benefits associated with sustainable cocoa certification schemes in Ghana. We aim to show and analyse the specific benefits and also, burdens distributed by a certification programme through its incentives to smallholder farmers, and how the incentives are bound up in state-firm power relationships.

One focus of the studies investigating the impacts of certification schemes is the attainment of socio-economic benefits such as strengthening local producer organisations, providing higher income returns for producers and offering a better quality life (Ronchi, 2002; Milford, 2004; Calo & Wise, 2005; Bacon, 2005; Bacon et al., 2008; Jaffee, 2007). Certification schemes also provide producers with access to credit, education and training; improve the management of products and lead to expansion in the producer's production (Murray et al., 2003; Taylor, 2005; Becchetti & Costantino, 2008). Meemken & Qaim (2018) for example recently found that sustainable certification standards such as Fairtrade and UTZ sustainability standards promote gender equality among certified coffee producers in Uganda. The standards also increase wealth in both male and female-headed households and alter intra-household distribution of asset ownership especially in male-headed households.

[20] https://www.bloomberg.com/news/articles/2019-10-18/against-the-tide-cocoa-growers-plan-to-suspend-ethical-programs

Additionally, certification schemes produce some environmental performance (Giuliani et al., 2017). For example, Blackman & Naranjo (2012) found that organic coffee certification reduces application of chemical inputs and increases farmers' adoption of some environmentally friendly farm management practices in Costa Rica. Moreover, in Ethiopia, forest coffee area under certification increases the possibility of forest conservation than that of uncertified areas (Takahashi & Todo, 2014).

On the contrary, research shows that there are also bittersweet aspects to certification schemes. For instance, Fairtrade organic coffee producers in Nicaragua and Mexico achieve better yields but are burdened with high labour cost. As a result, most farmers remained in poverty despite increase in yields and income levels (Barham, 2002; Bacon et al., 2008; Valkila, 2009; Valkila & Nygren, 2010). Snider et al. (2017) argues that while a certification scheme provides non-financial benefits to both farmers and cooperatives, low market demand for certified coffee, poor price incentives and high auditing and management costs undermine full participation of the entire membership of the farmer cooperatives in Costa Rica. Moreover, certification scheme improves farmers' productivity, incomes, biodiversity and carbon storage in Uganda, but the trade-offs between the socio-economic and environmental outcomes still persist (Vanderhaegen et al., 2018).

Again, while Fairtrade certification scheme increases the use of chemical inputs and average level of toxicity, the health problems associated with pesticide application may reduce as a result of education and occupational health safety training offered by farmer cooperative society for cocoa farmers in Cote d'Ivoire (Sellare et al., 2020). Some recent impact studies argue that certification programme produces uneven distribution of benefits and entrenches existing inequality. In the cocoa sector of Cote d'Ivoire, Fairtrade certification reduces poverty among cooperative workers more than the already poor farm workers. This is because cooperative workers receive better improved wages than the farm workers (Meemken et al., 2019; Meemken, 2020). These differential effects of certification programmes are also very peculiar among coffee producers in Mexico (Jaffee, 2007).

Most of the impact studies reviewed above are less theorised. They are also based on quantitative data and statistical analysis, hence, usually lack in-depth perspectives and lived experiences of smallholder farmers and other actors involved. The impact studies

on certification programmes also often discount the power asymmetries and tensions among actors who shape the effects of certification programmes (Lee et al., 2012; Newton et al., 2013; Lambin et al., 2018; Thorlakson et al., 2018; Neimark et al., 2019). In this article, we take a different approach. We analyse the impact of a certification scheme through a qualitative case study. We adopt a conceptual or analytical approach to understand the bittersweet aspect of a certification scheme in the cocoa sector of Ghana. Instead of quantifying and indexing the benefits and burdens of the certification scheme, we rather focus on the certification incentives, analyse how they serve as mechanisms for the distribution of benefits and burdens, and show the power relations associated with the distributional effects of the certification scheme.

4.3. Conceptual framework

We draw on access theory by Ribot & Peluso (2003) as a conceptual tool to analyse the certification incentives as access mechanisms for the distribution of benefits and burdens. Access theory also enables us to unpack the complex power relations between the state[21], the private sector and smallholder farmers that characterise the certification incentives in Ghana. A key aspect of access theory is its focus on how powerful actors access benefits in natural resource commodity chains (Ribot & Peluso, 2003; Ribot, 1998) and the differential power and social relations which influence the derivation, control and maintenance of benefits (Ribot & Peluso, 2003; Myers & Hansen, 2020; Peluso & Ribot, 2020). The theorisation of access by Ribot & Peluso (2003) is built on ideas of property and relations of production from Marxian political economy (Myers & Hansen, 2020). Their notion of access – the *ability* to benefit from things – is useful because it goes beyond the narrower view of property as simply the *right* to benefit from things (Macpherson, 1978).

Central to access theory is Ribot and Peluso's (2003) use of Ashraf Ghani's phrase (1995, p. 2) 'bundle of powers'. Originally, Ghani adopted the notion of a bundle of powers from earlier property theorists' concept of a 'bundle of rights'. Ribot and Peluso (2003) go on to expand the 'bundle of powers' concept even further, showing that power is exercised and benefits are derived not only through property rights but also through

[21] Of note, when we refer to 'the state', we mean the Ghana Cocoa Board and its subsidiaries, as well as other formal institution like the Forest Commission whose operations affect cocoa farming.

structural and social relational factors (i.e. access mechanisms) such as technology, knowledge, capital, market, labour and labour opportunities, social identity and authority (Ribot & Peluso, 2003).

Ribot & Peluso (2003) conceptualise that access mechanisms must be understood within the political-economic framework because some actors command and control access, while others maintain access to shape how people gain benefits. Actors control access by mediating the access of others such as checking, directing or regulating the functions or powers of others (Rangan, 1997). Access is maintained when actors expend or distribute resources or powers to keep the supply of benefits (Berry, 1993). Ribot and Peluso (2003) suggested that the analysis of access should first involve identifying the benefit(s) flows; second, outlining the mechanisms through which individuals or group of people attain the benefits; and third, understanding how the access mechanisms are structured by power relations within the political-economic context.

In this article, we harness access theory by first examining the certification incentives provided by the certification programmes as access mechanisms through which certified cocoa farmers obtain range of benefits. Here, we expand the notion of benefits in commodity chains beyond commercialised profits to a host of other forms of beneficial gains. We also extend our analysis to include various burdens associated with the certification incentives. In the second half of our paper, we examine the state and private sector firm power relations in the cocoa political economy that construct and shape the incentivisation mechanisms of the certification programmes.

Our argument is that the certification incentives are mobilised by a private sector chocolate firm to influence and recruit the thousands of smallholders to adopt sustainable production practice. These powers are being exercised by the chocolate firm because smallholder farmers cannot rely on the state for these incentives. We argue that the incentivisation mechanisms of the certification programme demonstrate the power of chocolate firm to gloss over and obscure the state and smallholder power relations and circumvent what is often seen as the problematic state (Ferguson, 1994; Hope, 2020). As a result, the firm gains the legitimacy to operate and maintain continuous access to the supply of ethical cocoa beans. However, the state controls and regulates the incentivisation mechanisms of the firm's certification programme. We link our case and discussions to Sikor and Lund's (2009) arguments about the relationship between

property (rights/power), authority and legitimacy. They argued that seeking authorisation for rightful claims has the effect of producing authority and legitimacy to the authorising institutions. We argue that as the firm is granted the formal rights by the state to operate its certification programme, it fundamentally establishes legitimate relationship between the firm and the smallholder farmers (Sikor & Lund, 2009, 2010). The firm further obtains and secures the legitimacy and authority because smallholder farmers accept and rely on the firm for certification incentives. This enables the firm through its certification programme to influence the production and labour practises, establish market relation with farmers for the supply of ethical cocoa beans. However, once the state is an authorising institution, it always has the power/authority and the legitimacy to control the firm's certification programme. In this process, some actors gain, control and maintain benefits while others lose or are burdened. Our concluding argument is that private sector certification incentives as access mechanisms are continuously embedded in the power relations between the state, smallholders and the chocolate firm.

4.4. Methods and case study description

In order to investigate these issues, case study research was conducted in Asunafo-North Municipality, south-west of Ghana (Figure 9). The focus was on Asunafo-North Municipal Cooperative Cocoa Farmers and Marketing Union Limited. This is a Farmer cooperative society organised by Mondelez International under Fairtrade certification programme. We selected this certification programme over others because it is the largest and most popular in the District. It has a membership of over 5000 certified farmers involving 67 rural communities.

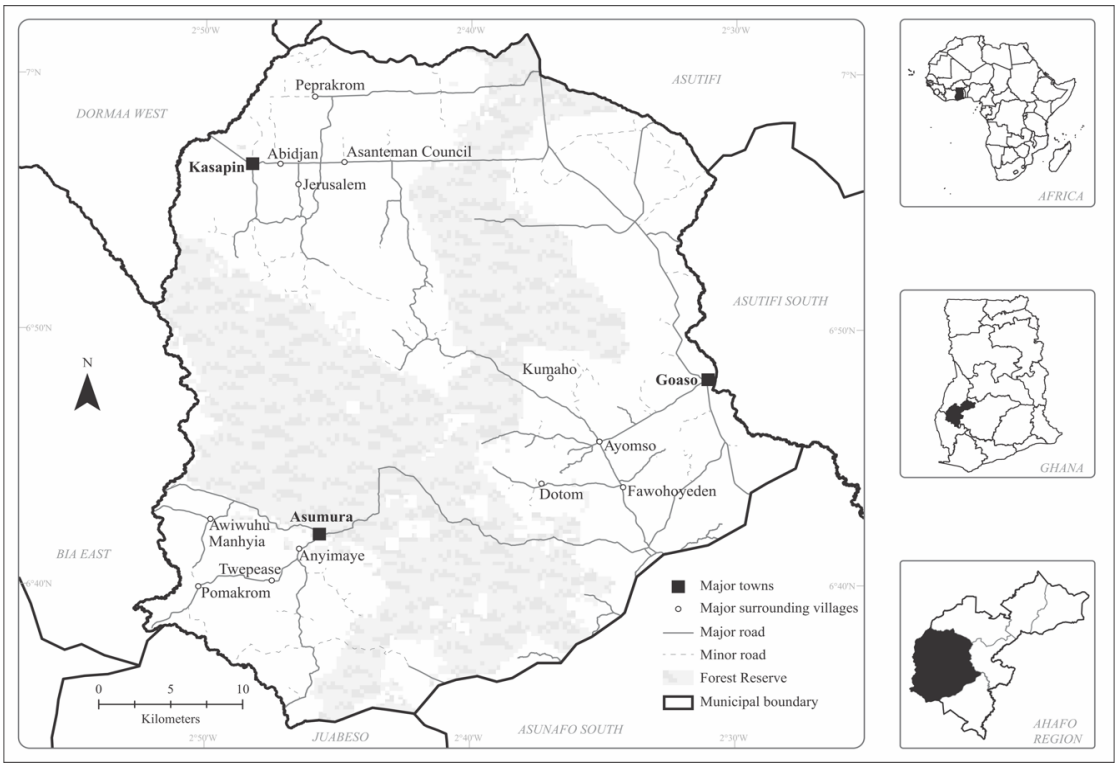


Figure 9: Map of Asunafo-North municipality showing various villages and towns used as study sites.

We conducted 40 semi-structured interviews with certified farmers randomly selected across the production communities. Within this sample, 4 participants held executive positions in the Farmer cooperative society, and 12 were females while 28 were males.

Additionally, we conducted 20 in-depth interviews comprising of 7 male farmers, 4 female farmers, 4 males and one female working with the Farmer cooperative organisation, 3 men working at the subsidiaries of Ghana Cocoa Board (2 at the Cocoa Health and Extension Division and one at the Seed Production Division), and finally, one official of the Forestry Commission. The certified farmers were also randomly selected for the in-depth interviews. However, we selected the cooperative workers and the officials of the state bodies based on their special practical roles at the cocoa supply chain and their formal relationship with smallholder farmers. For instance, the Cocoa Health and Extension Division and Seed Production Division are the key state institutions, which are responsible for the provisions of agronomic services to smallholders, while the Forestry Commission is responsible for protecting trees and promoting conservation in and around cocoa farms. Their selection was also motivated by the need to understand their views and perspectives about the certification programme. Also, field observations were carried out. We toured cocoa farms and sites of communal development projects. We additionally participated in the distribution of

premiums, the communal meetings and education programmes of the Farmer cooperative society.

The semi-structured and the in-depth interviews were conducted in the form of face-to-face interaction on farms, at the houses or at the offices. Firstly, we focused on the operational activities of the Farmer cooperative society and their significance to the certified farmers. We also asked about the challenges they encounter in their operations. We also tried to understand their operations in line with the core sustainability elements of the certification programme. Based on the operations and functions of the Farmer cooperative society, we again observed and asked questions about how the functions of the state bodies in the cocoa sector mean to the farmers. With that, we were able to understand the tensions and the relationships between the state and the smallholder farmers.

Linked to the above, we observed and questioned the certified farmers regarding what motivated their participation in the certification programme. We wanted to understand how the personal motivational factors of the certified farmers, including their livelihoods drove them to participate in the scheme, and also, how their inclusion was shaped by dominant structures that affect cocoa farming. With the officials of state bodies in the cocoa sector, our questions focused on their respective roles in the various rural communities, the challenges that confront them and their perspectives about the certification programme in terms of its importance to the farmers.

We additionally obtained some data from the documents of the Farmer cooperative society, website of the Mondelez International regarding its certification programme, news feeds of Bloomberg, Financial Times, Confectionery News, the Cocoa Post, etc.

Data were analysed using descriptive and thematic analysis techniques. Additionally, we deployed pattern-matching analytical techniques which involved comparing the data collected with propositions informed by the access theory (such as power relations among actors, bundle of incentives and benefits) (Yin, 2012).

4.5. Structural organisation of the Ghana's cocoa sector: an overview

Since the emergence of cocoa as a commercial crop in Ghana, the governance structure of the cocoa sector has undergone various forms of economic institutional changes. In

the colonial period, the sector was under the free market system involving direct market and trading relations between farmers and European buyers such as United Africa Company and Cadbury (Ton et al., 2008). However, it was in the 1930s when the British colonial administrators started to regulate the sector (Alence, 1990). In 1947, the British colonial government instituted Cocoa Marketing Board to oversee activities of the sector. This institutional establishment was the government's response to the cocoa strike by smallholder farmers who were agitating against the buyers for better market prices for their produce between 1937 and 1938 (Alence, 1990). Post-colonial governments since 1957 to date control the sector through the same state institution, now Ghana Cocoa Board.

Currently, the cocoa supply chain of Ghana is under two major control systems which include the conventional control structure of the state and the new alternative market networks of the private sector firms in the form of their certification programmes (Figure 10). With respect to the conventional control system, the state has maintained its autonomy and monopoly over the supply chain through structural reforms, the creation and expansion of subsidiaries of Ghana Cocoa Board, and the establishment of the market facilities, agronomic and research infrastructures across the producing regions. In addition to these, the state operates a nationwide sustainability programmes such as Youth in Cocoa programme, Cocoa Rehabilitation and Replanting programme, Mass spraying programme, Free delivery of fertiliser programme, etc. (Löwe, 2017). The maintenance of state power through these structural development and programmes is because every successive government wants to secure the significant revenue flow from the cocoa sector (Kolavalli & Vigneri, 2011).

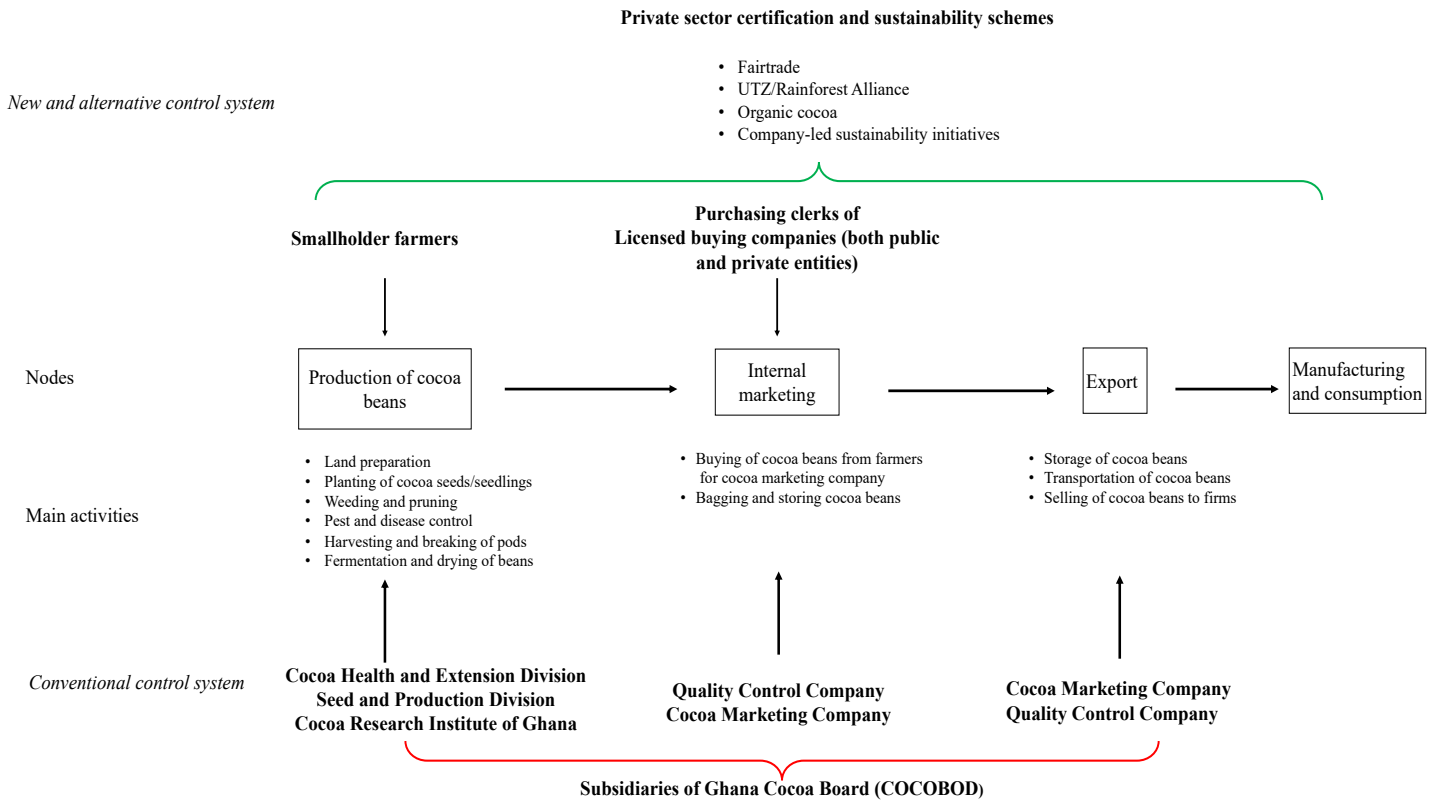


Figure 10: Ghana's cocoa supply chain and its control or regulatory system. This figure shows structural organisation of the Ghanaian cocoa sector. Ghana Cocoa Board (mostly referred as COCOBOD) represents the state and has dominant autonomy in the operation and governance of the sector. COCOBOD has several affiliates or subsidiaries that help in regulating the production and internal and external marketing of cocoa beans. Private actors only engage with the farmers through certification programmes and purchasing of cocoa beans.

The board operates through its subsidiaries. It draws on Cocoa Health and Extension Division (CHED) to provide agronomic advisory services and facilitate the state's sustainability programmes. Its Seed and Production Division (SPD) raises hybrid or new cocoa seedlings to be distributed by CHED. Agronomic research and innovations, and standardisation of agrochemicals, inputs and techniques of production are under the jurisdiction of the board's Cocoa Research Institute of Ghana (CRIG). The Board uses Quality Control Company (QCC) to standardise cocoa beans according to the market preferences both at the farm gate and at the internal and external trading points. The board's Cocoa Marketing Company (CMC) issues license to public and private licenced buying companies and grants them funds to buy cocoa beans from farmers for the CMC. The CMC also sells cocoa beans both internally and externally to processing companies and chocolate firms.

Ghana objected to the World Bank and IMF proposal of full liberalisation of its cocoa sector during the structural reformation periods in the 1990s. As a result, the trading, the science and research about cocoa production, agronomic advisory services and standardisation of cocoa beans are still controlled by CMC, CRIG, CHED and QCC respectively. However, alternative market networks have emerged in the cocoa sector. Because of this, the private sector firms are gaining direct market relationships with smallholder cocoa farmers (Glin et al., 2015). This new firm-smallholder relation has been possible through the establishment of farmer cooperatives and associations by firms under their certification programmes in Ghana. But firms can only operate their certification programmes if they are permitted by Ghana Cocoa Board to do so. Firm-led certification programmes are aimed to shape the production practises of smallholder farmers to supply the firms with ethical cocoa beans.

A typical case of firm-smallholder relation in the cocoa sector of Ghana is the Mondelez Cocoa Life Programme. In 2012, this programme led by Mondelez instituted Asunafo-North Municipal Cooperative Cocoa Farmers and Marketing Union Limited. Cocoa has been the dominant crop grown by smallholder farmers of the Asunafo-North rural communities since the 1940s (Bray, 1959). Farmers were enticed and recruited into the cooperative society to produce certified ethical cocoa based on Fairtrade certification standards. This certification programme targets four main sustainability problems on productivity, environment, social conditions and finance. Under this certification programme, Mondelez International is the lead firm with related chocolate companies

such as Barry Callebaut, Cargill, Ecom, Olam Cocoa as supporting partners. The programme is also supported by other notable institutions like Fairtrade International, Care International, Jacobs Foundation, Save the children, World Vision, Solidaridad, Swissconnect and Voluntary Service Overseas). Our concern is to understand what specific benefits and burdens are distributed by the certification programme to the smallholder farmers, how and why are they distributed in context of the existing state's political-economic power. We address this below with a focus on the certification incentives. Again, we unpack how the incentives serve as access mechanisms for the provisions of benefits and also, distribution of burdens to the certified smallholder farmers.

4.6. Incentives as mechanisms for benefits and burdens

In the context of the above structural organisation of the cocoa sector, the private sector firm provides certification incentives to the certified smallholders to influence their production and labour practises. The incentives touch on many of the structural and relational mechanisms of Ribot and Peluso's (2003) access theory, in that they include elements as diverse as technology or innovations, knowledge, financial capital, market, labour opportunities, authority, social capital and identity (Table 2). The ultimate outcomes of these mechanisms are six benefits, namely: (1) increase in crop yield levels, (2) increase in household income, (3) improvement in pest and disease control, (4) improvement in the level of field crop resistance to changing weather, (5) promotion of collective power and social interaction and (6) provision of community amenities or services (Figure 11). We address below how the certification incentives by the firm serve as access mechanisms for the distribution of benefits and burdens. We also show how incentives conceal the state's poor and unsuccessful relations with farmers.

Bundle of incentives	**Specific examples**	**Mode of facilitation**
Farm innovation or technology	• hybrid cocoa seedlings • integrated pest and disease management techniques • row and wide spaced planting technique • pruning ideas and techniques • cocoa agroforestry techniques with native trees	Education, training and field demonstrations by technical experts
	• synthetic fertilizer • organic fertilizer like poultry manure, husk of cocoa pods • pruning and spraying machines	Recommended by technical experts but purchased by farmers
	• pesticides • biostimulant	Free distribution as percentage part of farmers' premium
Labour and labour opportunities	• skill development and improvement • agronomic assistance from technical experts	Education, training and field demonstrations by technical experts
	• trained local youth	Through premium development plan where a percentage of money is allocated to train local youth and finance their services
Financial incentives	• cash to supplement household income • cash to finance community development projects	Premium

	• medical screening • scholarships • Financial facility for savings and loan acquisition	The cooperative union internal fund through its premium development plan Cooperative union mutual loan scheme
Market	• US$ 2400 minimum price per metric tonnes for Fairtrade certified cocoa produced • US$ 240 premium price (bonus) per metric tonnes for Fairtrade certified cocoa produced	Record keeping and declaration of cocoa output by farmers every year
Knowledge	• Facts and information on cocoa physiology, pest and disease infestation process and its management through timely weeding, pruning and application of standardised pesticides. • Labour safety and protection information • Knowledge on child protection, child education and development • Information on cocoa agroforestry and environmental protection • Additional knowledge and skills in other alternative areas of livelihoods	Education, training and field demonstrations by technical experts and the management team, and Communication and sharing of farming experience among farmers
Social capital or identity	• Exchange of knowledge, inputs, labour and other resources	Farmer associations and their frequent meetings and discussions

		Leadership of the farmer organization
Authority	• Self-government or independence • Level of autonomy or political empowerment	The formation of cocoa farmers' cooperative societies and their leadership, Certification and licensing of the farmer organization by both Fairtrade International and Department of cooperatives in Ghana

Table 2: Illustrated in this table are the incentives provided by the certification programme and the specific benefits the farmers derive from them

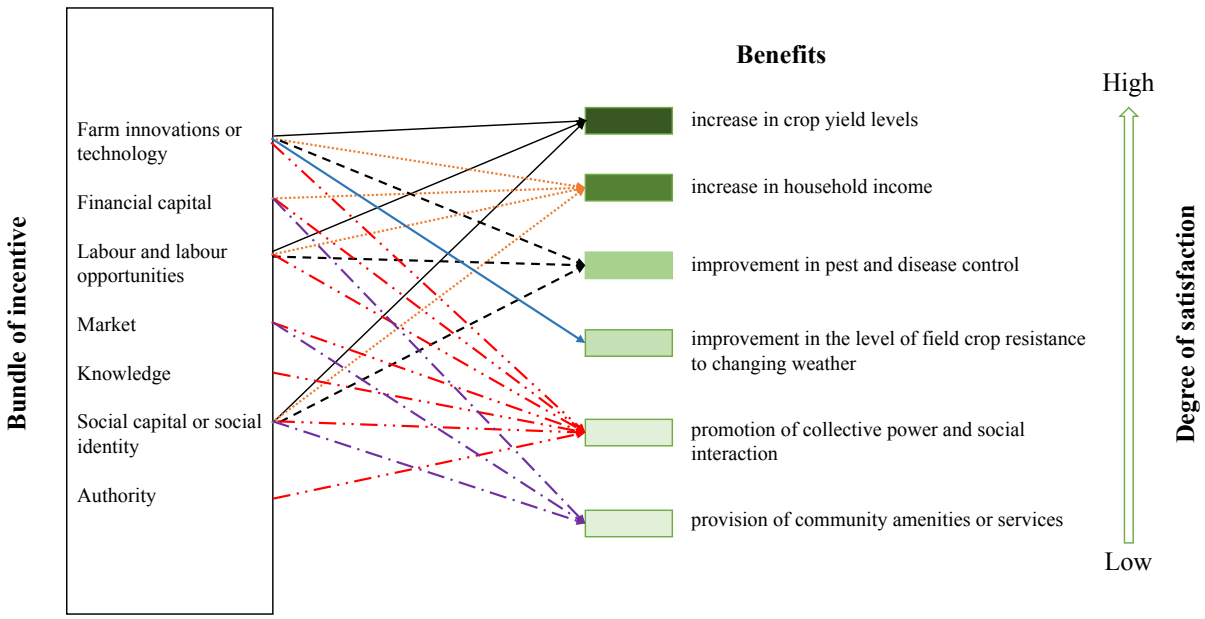


Figure 11: The relationship between the incentives and the benefits. The figure illustrates the incentives and the associated benefits obtained by the smallholder cocoa farmers under the certification scheme. It also shows how farmers rank these benefits in order of satisfaction. Of note, these benefits are not mutually independent. Most of these benefits result in higher yields.

Farm innovation or technology

Incentives linked to agronomic innovations, inputs, and technologies from the private actors are meant to relieve farmers from the burden of lower crop yield, unsustainable income, pests, diseases and bad weather, which the state has constantly failed to ameliorate. For example, the state policy intervention on free distribution of synthetic fertiliser in 2013/2014 failed when fertilisers were distributed along political affiliations, and unscrupulous and corruptible personalities hoarded and sold fertilisers for money (Laary, 2015; Bigg, 2017), a claim also confirmed by a sub-chief who doubles a farmer in one village. Also, many farmers claimed that they were reluctant to participate in the cocoa rehabilitation and replanting programme (which started in 2011) because of the state failure to provide compensation and supply inputs such as hybrid cocoa seedlings and agrochemicals to some farmers who rehabilitated their farms by cutting down aged or diseased cocoa trees (Oppong, 2015).

The private sector firm intervenes with agrochemicals, implements, seedlings and agronomic ideas etc. through its certification programme (Table 2). For example,

according to an executive of the farmer cooperative society, more than 400,000 hybrid cocoa seedlings have been raised and distributed freely to farmers with the support of Agro-Eco Louis Bolk institute (which is an independent private advisory organisation) and technical experts of the cooperative society. Farmers' access to agronomic ideas is facilitated by the technical support network, including technical experts of the union's management team and private collaborators like Agro-Eco Louis Bolk Institute. The experts use education, training and field demonstrations to promote sustainable farm management practices and inputs, known as Good Agricultural Practices. Individual farmers obtain agronomic inputs through the premium measured by the individual annual volume of cocoa beans they produced.

However, these ideas and inputs are shrouded with burdens. For instance, the advice to use cocoa husks to replenish on-farm soil affects women who previously used these wastes to make soap. Similarly, frequent application of pesticides has impacts on other crops in the cocoa farms—for instance by retarding the growth of mushrooms or by contaminating cocoyam leaves—affecting women who harvest these crops for sale and as food. A 'chief farmer' in a village articulated that:

> Crops such as yam and cocoyam are mostly affected when we apply these agrochemicals. If you do not have spare land on which you plant these food crops, then you and your family will be in trouble…… Even nowadays, the women do not get the mushrooms as it used to be. I think the termites and other organisms that help to produce these mushrooms are killed when we apply these agrochemicals. If I am applying these agrochemicals alone on my farm, I know the spots where the mushrooms grow so I do control myself well. But if you seek for communal help, nobody will recognise them, and these spots will be affected.

Such situations reflect similar patterns in other developing countries, where interventions that fail to recognise uneven power or structural differentials undermine the ability of other social actors to mobilise resources to make a living (Leach et al., 1999; McCusker and Carr, 2006).

Likewise, the adoption of the row and wide spacing planting techniques and hybrid cocoa seedlings is heavily associated with high production and labour cost. Replanting hybrid cocoa seedlings in old land use fields using the row and wide spacing planting technique requires additional labour for clearing weeds and the application of fertilisers, pesticides and fungicides to improve soil fertility and increase survival rate

(cf. Amanor et al., 2020). Where labour is unavailable, the growth and survival of the hybrid cocoa seedlings is affected, sometimes with extended crop maturity period. While farmers battle with such production and labour cost, the inputs they receive are claimed to be insufficient. For instance, a farmer indicated that:

> Yes, pesticides and those ideas are now available, but they are not sufficient. Nowadays, the infection rate is high. If you are not careful all your pods will be destroyed, and you will get nothing. Those insects are dangerous, and you always need to constantly apply pesticides. About 3 or 5 bottles of pesticides cannot be enough for the whole year.

The manager of the farmer cooperative society stressed that, 'the premium cannot cover all the things farmers need' even though there is high demand for pesticides and bio-stimulants by farmers. As a result, even more expensive implements like pruning and spraying machines are often procured collectively by some farmers.

Labour opportunities

Similar kinds of benefits and burdens are found to characterise the incentives intended to upgrade farmer labour skills, improve labour safety and health conditions, and enhance access to technical assistantship. Labour related incentives by the private actors aim to tackle the problems of aged farmers, rural-urban migration, lower income, poor working conditions that have long been overlooked by the state (Löwe, 2017). Labour incentives are facilitated either by the farmers' annual premium development plan or the lead company's agronomic experts. In the former case, a percentage of the farmers' premium is allocated to train local youth or hire additional experts to undertake wage-based farm management activities or training for farmers. This means in order for farmers to meet the Fairtrade production and product standards, they must reinvest their own labour and the premium in their farms to (re)produce cocoa beans for the global chocolate industry.

While the certification scheme requires additional labour to produce more cocoa, local labour relations make this a challenge. Much cocoa is managed by 'caretakers', people employed by absentee and aged farmers to manage cocoa farms, and in return obtain half or one-third of the cocoa output. Due to lack of financial capital and their informal labour contract arrangement, caretakers are in no position to access hired day labour or task-based labour. Additionally, the focus on yield increase for higher premium

under the scheme causes increasing demands on family labour; essentially women in areas of planting and maintenance care of young cocoa plants, fetching water for pesticides application, gathering and breaking of cocoa pods, carrying, fermenting and drying of cocoa beans (cf. Agyare-Kwabi, 2009). However, added labour hours required by the scheme result in different distributional effect among household members (D. Jaffee, 2007; Mutersbaugh, 2009). This is because as a result of dominant social norms associated with traditional gendered division of labour and land tenureship regimes, women largely serve as unpaid family labour on smallholder farms (c.f Barrientos, 2014), whereas men generally control household income (c.f Myers, 2020; Sayid, 2020). In cases where women have ownership rights in cocoa farms, they tend to heavily depend more on additional hired labour than men (Barrientos, 2014) despite their small plots. These unequal gendered labour relations (LeBaron & Gore, 2020) can become unjustly entrenched in the event of additional labour requirements for yield growth under cocoa 'sustainability' schemes.

Knowledge

While farmers are often ill-informed about agronomic services and standardised practices by the state (cf. Löwe, 2017), private actors have successfully exposed farmers to information or knowledge about opportunities, risk, labour, production and the market standards (see table 1). Information is communicated through education and training programs, and in some cases through the internal verification system of the farmer cooperative society. The external third-party verification process undertaken by FLOCERT also serves as medium of information flow to the farmers. However, the farmer cooperative society still needs to disburse funds from their premium to finance the cost of information delivery. For instance, in the premium development plan of the Asunafo North Cooperative Society, a total of US$ 23,080 is allocated for educational and training courses for members to attain knowledge on climate change adaptation measures, labour issues, Fairtrade standards, leadership and governance for the 2020-2021 operational year.

Access to information about labour requirements, safety and health precautions, production practices and market specificity of premium cocoa are influenced by gender, literacy and household size. Existing gendered labour traditions see men as the repository of knowledge and information about cocoa farming. This is because cocoa

farming in Ghana has historically been dominated by men, with women and other household members in a supporting role. Certain types of labour associated with cocoa farming, such as forest clearance or cutting down of large and tall trees, are one factor among others that explain male dominance in cocoa farming (Amanor, 2001; Amanor-Wilks, 2009; Hill, 1963; Wilson, 1990). While female cocoa farmers in the certification programme are provided with information on sustainable cocoa production, the existing gendered tradition compelled them to rely on hired labour or their male counterparts for certain tedious task such as pruning[22], pesticide application, weeding on farm and carrying of cocoa beans to the sale points. Most of these works undertaken by hired labour are not supervised by the women, and often do not follow sustainability practices. This lack of supervision is a result of house management responsibilities of women and their engagement in non-cocoa production ventures such as trading to support household economic and social needs. This supports LeBaron & Gore (2020) recent finding that dominant gendered norms and values do not permit women to benefit from cocoa farming in Ghana.

Literate cocoa farmers are observed to be earlier adopters of new farm innovations and compliers with Fairtrade standards in comparison to illiterate farmers, due to their abilities to access information quickly. Through 'farmer to farmer' approach or 'train-the-trainers approach' (also Ansah et al., 2020 p.68), literate farmers convey certification information to illiterate farmers. Also, relatively larger households better divide labour among family members to enable them access information. For instance, based on the cooperative society's regular adherence to Fairtrade standards, an 18-year-old man was permitted to attend an educational training programme on behalf of his parents who were respectively undertaking cocoa fermentation and childcare duties. While household size influences access to information and production practices (cf. Chayanov, 1986), burdens such as higher labour cost, disease and pest infestation are unevenly distributed among female-headed, single households and illiterate farmers. This is because of their limited abilities to access sustainable cocoa production information.

[22] Pruning usually involve climbing ladders to remove diseased pods and branches from the trees.

Social capital, institutional power and authority

The farmer cooperative society established by the certification scheme provides farmers with institutional power, self-government and authority, which has been denied by the state for a very long time. The independence and authority that the cooperative society accrues promote the use of collective power and facilitate social interaction. Collective decisions and community development initiatives are taken by the farmers themselves with less dependence on the local authority or the state. Linked with this institutionalised farmer collectivism is the support given to a close support network that facilitates the exchange of knowledge, information, inputs and communal labour for community development projects. Access to certain needs is usually facilitated through the leadership of the farmer organization. For example, in relation to artificial pollination, a state initiated agronomic programme, a farmer asserted that: '...It was really difficult to get these pollinators. A lot of farmers here needed their services. Whenever I go to them, they tell me they are fully booked. So, I informed chairman about it and I eventually got their services'. This also relates to the lack of the state's capacity to recruit and employ pollinators to the artificial pollination programme to ensure adequate and frequent provision of the associated agronomic services to the smallholders. However, despite this situation, the leadership of the cooperative society are there to lobby and fight on behalf of their members.

Additionally, farmer collectivism promoted by the private sector has enabled farmers to fight the activities of illegal loggers who often cause damage to their farms. The state over the years has been unable to address illegal logging in cocoa farms. Since the farmers do not have a formalised authority from the state, they rather resort to vigilante justice and the threat of violence as means to protect their farms from the illegal loggers. According to a farmer,

> As soon as you see some marks and numbers on trees in your farms, then you must alert other farmers. If not, they will destroy your field crops without getting any form of benefits or compensation.... They mostly produce some fake documents as evidence of their concession.... Because we have been preventing them in the day, those thieves now operate at night.

This self-organized protection is an adaptation mechanism by the farmers made possible as a result of the certification programme. The organized protection of

farmers' livelihood is necessary because the state is absent to deal with the activities of the illegal loggers. Farmers' responses to the illegal loggers speak to their moral obligation to defend their subsistence rights and justices in times of state's failure (Scott, 1976, p. vii; 1985). This also resonates with the organized patrols, shared security arrangement and vigilante justice in Malagasy vanilla production systems due to the private sector market intervention programmes (Neimark et al., 2019).

Such '(ir)rational' vigilantism should not exclusively be seen as the absence of the state in dealing with the intruders but also, it is because farmers are encouraged to protect and conserve trees under the certification programme in order to continuously receive premium on the cocoa they produce. As indicated by one farmer:

> 'We are told to protect the crops and the trees, and we would get premium from doing that. But this is an extra work and sometimes it is very risky to deal with these illegal loggers. Just imagine fighting these criminals at night'.

Self-organized vigilantism is sometimes used as 'symbolic resistance' against corruptible institutional actors who are suspected to abet and deputise illegalities (Neimark et al., 2019, p. 2). In other jurisdictions, rural dwellers use vigilantism not only to prevent and expel intruders from destroying livelihoods but to avoid being accused of exploiting and destroying resources illegally (Li, 2007).

Financial incentives

The sustainability scheme also incentivises farmers with cash benefits as a percentage of their premium for producing Fairtrade certified or ethical cocoa beans. These financial bonuses are used to supplement household income, finance community development projects and scholarships which the state has failed to deliver. The state funds and facilitates what is called cocoa infrastructure projects in Ghana. However, they are mostly road projects while other urgent needs of farmers remained unfulfilled. The private sector through the certification programme, comes in to directly support farmers with financial capital to construct community infrastructure projects. For example, the Asunafo North Cooperative Society's premium development plan for 2020-2021 allocates 33 per cent of the premium for the distribution of cash bonus to farmers, 5 per cent for the establishment of social infrastructure and challenge fund, 12 per cent for community development, and 4 per cent for scholarships for needy

students. Indeed, as the 'premium cannot cover all the things farmers need' (as indicated in the previous quote), it was found that the monitoring systems, verification arrangements and governance of the farmer organization place diverse forms of bureaucratic and certification costs on farmers. The premium is used to finance these costs (see Mutersbaugh, 2002 for similar finding in Mexican coffee production system). For example, in 2020, the cooperative society used about 19.5 per cent of its premium to finance the cost of certain administrative and certification activities (Table 3 below).

Action	Activities	Objectives	Responsible person(s)
Use 5% of the premium for payment of certification fee for 2020 and membership dues	Use the fund for payment of membership dues and certification fees	To help the union maintain its Fairtrade certificate	Union Executives and Union Manager
Set aside 14.5% of the premium for union administration	3% for salaries and allowance	To motivate and strengthen the capacity of the workforce	Union Executives, premium committee and manager
	2.7% of the amount on fuel and other related vehicle issues	To facilitate an effective management and monitoring	Union Executives, premium committee and manager
	2% of the amount for stationaries and other office equipment	To facilitate and strengthen records management at the union	Premium Committee and manager
	1.5% of the allocated amount of the premium for AGM of the union	To enhance accountability and participation among stakeholders and members. To approve budget and Fairtrade Premium Development plan	Union Manager and Executives
	1% of the amount for official duties and travelling allowances and charges	To meet some important engagement between the union and stakeholders both local and international	Union Executives and premium committee
	1.8% of the premium to train and support society managers and Technical officers (TO) to update membership register	To ensure that membership register is regularly updated	Union Executives and premium committee
	2.5% of the amount would be used on general and special meetings (At least Four)	To deepen members participation, democracy and also free flow of information. Also, to discuss fairtrade premium development plan	Union Executives

Table 3: How the Farmer Cooperative Society uses a portion of the financial incentives (the premium) earned by farmers under the Fairtrade certification program. Farmers receive 80.5% of the premium, the rest is allocated to cooperative activities as noted in the table.

While the premium is used as a driving element for farmers' participation and fills a void left by the state, it is at the same time benefitting the corporation and certifiers, in that the cost of labour, production, bureaucratic and certification become the farmers' burden. In this situation, we say that farmers do not receive the actual premium on their produce. This is because the premium is often altered before they are distributed to farmers.

More so, the 'altered premiums' are unevenly distributed among farmers, for instance with caretakers (those farmers hired to manage absentee or aged landowner farms) getting nothing at all due to their informal contract arrangements. However, in turn, the absentee and aged farmers' share of the premium can be undermined by the stealing of cocoa beans by caretakers, either alone or in collusion with middlemen like purchasing clerks. Due to theft of cocoa beans, a falsified total annual cocoa harvest is recorded, and a distorted premium is calculated. Also, in most cases, the premium is not distributed on time. The premium is supposed to be distributed between June and July, a period where both the minor and major harvest are over, and farmers are in most need of the premium for farm management activities. But farmers often receive the premium in October. This delay poses the risk of disease and pest infestation and disrupts farmer group operational activities and community development projects.

Market incentives

The private sector also uses the certification programme to mediate poor market relationship between the state and farmers. In addition to fixing lower producer prices, the state through the purchasing clerks provides farmers with what is usually called 'cocoa bonuses' on irregular basis. This may range US$0.8-1.7 on every 64.5 kg of cocoa produced. Sometimes the bonuses are given to the farmers in addition to cutlasses, soap, bags of rice, or other minor household items like Christmas presents. The private sector intervenes with its own certification scheme and pays farmers US$2400 minimum per tonne, plus a US$ 240 premium on every tonne of certified cocoa produced. In order to receive this market incentive certified cocoa produced by farmers must bear Fairtrade labels and traceability marks that simply describe the farmers' geographical and locational identities. Guthman (2007) argues that these market labels are property rights that allow producers to trade their commodity in the global market. Labels and marks differentiate commodities and erect barriers to market entry (esp. alternative or ethical cocoa market) if product quality and production process requirements are not met (Guthman, 2014).

However, some farmers do not receive an actual premium at the right level relative to their annual cocoa output. This is caused by poor record keeping of harvests, often generating conflicts. For example, while helping the management team to distribute inputs and cash to farmers, the lead author received several complaints from the

farmers that they were being cheated in relation to other farmers because they produced more cocoa beans than them. On one occasion, a complain and protest led one farmer to terminate her membership from the association. Additionally, there is the further burden of theft by purchasing clerks at the point of sale. Clerks resort to adjustments of scale machines to steal some kilograms of cocoa beans. The existence of such exploitation is because regular inspection is solely under the jurisdiction of the QCC, the state, which has limited institutional means. While the firm uses the market incentives to conceal the state's poor relations with the smallholder, the actual benefits from the incentives are at times not realised because the firm cannot deal with existing institutional problems of the state.

4.7. State-private sector power relations

The certification incentives and their distributional effects do not operate independently, rather, they operate in the context of struggles between the state and private sector firms for power and control. We show below the extent to which the state exercises power to control the firm's certification programme in the cocoa sector to influence the distribution of gains.

The distribution of productive resources or livelihood assets to farmers through the certification programme enables the private sector firm to influence farmers' production and labour practises. It also enables the firm to gain or maintain market access to the certified cocoa beans. The material benefits associated with those livelihood assets also entice farmers to participate in the scheme. For instance, a farmer indicated that 'I joined the organisation because of what they promised us and, for years now I can testify confidently that they have lived up to expectation. This has never happened before'.

While farmers' participation is influenced by their access to inputs and resources made available by the private sector, the state exercises its powers by evaluating and screening the asset inflows to cocoa farmers. Formally, any potential useable productive resources (fertiliser, pesticides, herbicides) either for sale or in the form of free handouts must be tested and endorsed by the Cocoa Research Institute of Ghana (CRIG). This state regulatory system serves to prevent the negativities that may arise in the course of granting the firm the legitimacy or the right to certify the rural cocoa

production space. The state needs to control the input flows to avoid potential risk to the sector. At the international market, the cocoa sector of Ghana is noted for producing quality cocoa beans and gets better market price even before the advent of these certification programmes. The state wants to maintain that reputation at the international market (Interview with an Official of Ghana Cocoa Board, 2018).

However, where the state's control system seems to appear unsuccessful, a firm's certification programme is in potential jeopardy. This is because many fake or substandard inputs still intrude into the local market (Interview with the Manager of the Farmer Cooperative Society, 2018). The farmer cooperative society and the certification body try to instil discipline and control the actions of the farmers. They do this through education and training programmes, where farmers are constantly advised to patronise the standardised inputs from cooperative's agrochemical store in addition to what they distribute to the farmers as premium (Interview with a Cooperative Worker, 2018). The third-party verification processes and the services of the agronomic technical experts also serve as control mechanisms. For example, farmers who use non-standardised inputs and practices are warned or subsequently excluded from the farmer organisation by the executive members. However, the continuous availability of fake inputs threatens the operations and sustainability of the certification scheme.

Also, as a result of the certification programme, the certified farmers are able to gain additional market benefits through the firm's payment of minimum and premium prices for producing certified Fairtrade cocoa beans. However, the certified farmers do not have direct market relations with the firm. It is the state that still mediates this new market relation between the farmers and the firms. Lead firms do not have the direct market right to purchase Fairtrade cocoa beans from the certified farmer groups. Both the private and public licensed buying companies buy cocoa beans in the rural communities and sell them to CMC before they are sold to the firms[23]. "Farmers can get

[23] Certified cocoa beans reach firms via cocoa traceability marks and market procedures. At the farm gate, purchasing clerks of the licensed buying companies buy cocoa beans and use marks to differentiate certified cocoa from the conventional ones. They also record the details of the farmers and where the cocoa beans are produced. The licensed buying companies would then transport and deliver the certified cocoa beans to CMC. CMC will keep the certified beans for the firms. These certified cocoa beans must come from the villages where the firms operate their certification programmes. There is a time limit. If

more market benefits and experience a higher annual income if we sell cocoa directly to Mondelez" (An Interview with the Manager of the Farmer Cooperative Society, 2018). But the state still maintains its market structure because it wants to appropriate more benefits than the farmers.

In relation to the appropriation of market benefits, Ghana and Cote d'Ivoire have introduced a new price regime called the Living Income Differential (LID) where firms are asked to pay higher minimum and premium prices of US$ 2600 and US$ 400 respectively to cocoa farmers (Mieu, 2020; Nieburg, 2019). In order to prevent firms from evading the LID, the state is issuing threats to suspend the certification programmes of firms that fail to avoid the payment of the LID (Mieu, 2020; Nieburg, 2019). Between 2019 and 2020, both governments even halted certification programmes of some firms who avoided the payment of the LID, and eventually suspended forward sales of cocoa for the 2020/2021 season (Mieu, 2020; Nieburg, 2019). This is a controlling mechanism by the state to attain more gains from the firms for itself and for the smallholder farmers. The President of Ghana indicated that this new concession about the LID is targeted at the 'manifest injustice' that characterise the chocolate economy (Mieu, 2020; Nieburg, 2019). In order to maintain the continuous flow of this benefit, the states of Ghana and Cote d'Ivoire are currently seeking to name and shame any firm that fails to pay this new market prices on cocoa beans (Aboa, 2021; Myers, 2021).

Furthermore, in recent times, new surveillance system has been deployed by COCOBOD to monitor and control the activities of firms and their certification programmes. The surveillance system includes the recruitment of retired security officials such as the military, police, immigration and customs officials. One official of Ghana Cocoa Board for example indicated, "we cannot let them operate without being monitored. We have a security system in place, and it covers the entire cocoa sector. If the firms want to evade the system, the system will expose them." In addition to this, Ghana Cocoa Board is now recruiting and training staff of its Research Department to

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a firm fails to buy the certified cocoa beans from CMC on time, CMC reserve the right to sell them to different firm (An interview with Ghana Cocoa Board Official, 2020).

monitor and evaluate certification programmes of the private sector[24]. This is to ensure that major stakeholders especially the state and the cocoa farmers obtain the maximum benefits from the programmes.

Moreover, the private sector firm incentivises the certified farmers to conserve trees in their cocoa fields. In order to reinforce farmers' motivation on forest conservation on farms, the Farmer cooperative society and the firm are negotiating with the state on behalf of the certified farmers to own and in future benefit from the trees they plant and nurture. However, the state is still reluctant to relinquish tree rights to the farmers. An official of the Forestry Commission for example asserted that "farmers have the right to do whatever they want with their lands, but they cannot own the trees". The state still reserves the ownership rights over the 'environmental labour' (Otto & Mutersbaugh, 2015, p. 418) of the smallholder farmers.

4.8. Discussion and conclusion

This article examined the impact of a firm-led certification programme through the lens of access theory. With the theory of access, we are able to understand how power is expressed via the certification programme to enable different actors—such as the smallholders, the state and private sector firm—gain, control and maintain access to benefits.

Firstly, the smallholder farmers gain benefits from cocoa farming via the certification incentives. We showed how the certification scheme provides cocoa farmers with powers which allow them to obtain multiple benefits from cocoa farming. The powers in our view are mechanisms of access and they include various certification incentives. These are provided by the firm because farmers lack such powers, and the state is also less capable to provide them. The incentives are power resources (Svarstad et al., 2018) that enable farmers to achieve outcomes by converting the resources to another (Bourdieu, 1986). But most often these powers or incentives burden farmers and specifically some actors like women and caretakers at the supply chain (cf. Mutersbaugh, 2002; Ruben & Fort, 2012; Neimark, et al., 2019). The distribution of

[24] https://thecocoapost.com/cocobod-trains-staff-to-monitor-cocoa-sustainability-programs/

the burdens is reinforced by dominant structural differences that characterise cocoa farming in rural communities in Ghana.

Smallholders gain and also maintain access to benefits by adopting the required labour and production practises provided by the certification programme. For example, the compliance of labour safety and environmental standards, and adoption of the right agronomic practices enable farmers to gain and maintain access to premium and their relations with the firm. Here, access maintenance by smallholders is realised through compliance and adoption of certification standardised practices rather than distributing one's resources to maintain the supply of benefit (cf. Rangan, 1997; Agyei, 2019).

Secondly, in contrast to the smallholders, the private sector firm gains, controls and at the same time maintains access through its certification programme. The firm exercises these powers by providing incentives. Some of these incentives and their intended effects could be linked to Steven Lukes' (2005) third power dimension and the Foucauldian discursive power (Svarstad et al., 2018; Kirst, 2020). A typical case is that the firm influences farmers' actions and thought by disseminating knowledge via education and training programmes, and the employment of agronomic experts. This enables farmers to adopt standardised practises to produce ethical cocoa beans for the firm. These powers are exercised by the firm because the state lacks the ability to provide these incentives and hence gives the firm formal right to operate. The firm's certification programme is also permitted by the state because the state wants to obtain benefits for itself. Here, lack of power on the part of the smallholders and the state over access to incentives enables the firm to gain, control and maintain market access and relations at the supply chain.

This resonates with Sikor & Lund's (2009) discussion on access regarding the relationship between power, authority and legitimacy. Sikor & Lund (2009) argue that seeking authorisation for rights or power eventually grants the authorising institution the authority to do so. Our case rather takes a different line of evidence and argument. With our case, we argue that the firm is authorised by the state to operate because it can provide incentives to smallholders which the state cannot. As the firm exercises these powers, it mediates the poor relations between the state and the smallholder. In this way, the firm secures and maintains an operational recognition or legitimacy from

the state at the supply chain to reorient farmers' labour and production practises to meet market preferences (cf. Moore, 2000; Neimark et al., 2016). This recognition is further reinforced through farmers' participation in the programme and their reliance on the firm for these incentives (cf. Suchman, 1995).

However, while the firm gains and maintains authority and legitimacy through the certification incentives, the state remains resolute and controls the powers of the firm and the smallholders. The state controls the firm's certification programme because it wants to maintain access to benefits, authority and legitimacy. For example, the state regulates the flow of inputs and monitor the certification programmes because it wants to protect its cocoa sector and obtain gains. Again, it remains reluctant to grant tree tenure rights to farmers in order to maintain its authority and rights over forest trees in off-reserve areas. Here, we argue that the state's power position and control relate more with the Sikor & Lund's (2009) argument on power, authority and legitimacy. This is because as long as firms continue to seek authority and recognition from the state (i.e. Ghana Cocoa Board) to operate, the state will continue to reserve the rights and authority to control and regulate the certification activities of firms. This argument also suggests that the existence of certain structures play an important role to constrain the exercise of power (Bourdieu, 1977, 1989; Ribot & Peluso, 2003; Dowding, 2008; Svarstad et al., 2018).

Our analysis and arguments show that access to benefits (and burdens) through various mechanisms always manifest in the context of power relations among different actors. While some actors gain, others control. Some actors too exercise some powers to maintain access to benefits. Also, the gaining, controlling and maintaining of access can be exercised simultaneously by an actor or group of actors. With our case, smallholders gain and maintain access, but the state and the firm obtain, control and maintain access at the same time.

More so, two major contrasting worldviews reflect our analysis of power relation that characterises the impact of the firm-led certification programme. Firstly, our findings suggest that the operation of cocoa certification scheme is a reflection of the failure and the weakness of the state to adequately and efficiently regulate the production space. This argument links to why the incentives and the benefits of the Fairtrade certification scheme drive farmers participation. Secondly, one may however argue that the

operation of the certification programme is rather a reactive response of the confectionery industry to correct the historically established chains of exploitation and sustainability problems of which it is partly responsible for at the supply chain (Goodman et al., 2012; Goodman & Bryant, 2009; Goodman et al., 2010, 2017; DuPuis et al., 2006). Such response would enable firms to maintain, advance growth and salvage its image (Schneider, 2014). Having said that, certification programmes are still used as alternative political projects by firms in the cooperate world (Goodman et al., 2012), where diverse corporate institutions pursue legitimacy to obtain rights and access to benefits in the name of sustainability: to enhance livelihood, protect the environment, promote social justice and participation (Ansah et al., 2020).

We conclude by saying that some of our findings relate with other impact studies that document the bittersweet aspect of certification programmes. However, we propose that examining the distributional effects of certification programmes in the context of power relations (i.e., who gains, who loses, who controls and who maintains access) provides a different and a more elaborate understanding. We particularly suggest that future operations of certification programmes should be aware of the existing structural differences among farmers, the institutional constraints of the state so that burdens could be ameliorated, and also, skewed distribution of benefits and hindrances could be avoided.

4.9. Postscript

This paper was written as a thesis chapter to demonstrate the benefits farmers derive from the certification programme. The impacts of certification schemes in the Ghanaian cocoa sector have received less attention despite their recent growth. The paper was produced with the intention (and in line with my research question) to contribute to the impact studies on certification schemes in the global certification economy. It was also intended to understand the role of the private sector firms in managing sustainability at the cocoa supply chain. Many impact studies on certification schemes for cocoa, coffee, soy, oil palm, etc. are often produced through quantitative approach. This paper rather used a qualitative approach through the lens of access theory. The theory was used to analyse the distribution of benefits and burdens through certification incentives as mechanisms. It also helped to understand the political and economic context or state-firm power relation that structure the certification incentives

and their distributional effects. This approach is different from most quantitative studies that try to measure the impacts in statistical terms, which often ignore the mechanisms through which impacts (benefits and burdens) of the certification schemes are facilitated and the power relations which associate them. Having said that, I suggest that future research should focus on comparing multiple and different certification programmes by employing mixed methods approach through dominant theoretical lens.

While I showed the benefits and burdens associated with the certification scheme, I also became concerned of the unjust local realities connected with farmers' social relation and conditions of production that are less recognised and continue to influence access statuses of smallholder cocoa farmers. These disregarded social realities by the certification programme are discussed in the next chapter.

A caretaker working for an absentee farm owner with the help of other farmers. The cocoa beans were transported from the cocoa farm where the fermentation process was undertaken to the village yard for drying. Picture by the Author, 2018

Chapter Five: Access status of smallholders under a certification scheme

5.0. Preface

This chapter analyses the actual connections between the certification programme and farmers' production relations. In chapter 3, I examined how the certification programme was operated to shape local agrarian context. In chapter 4, I showed how the certification scheme had provided incentives as mechanisms for the distribution of benefits and burdens. I also argued that the incentives concealed the unsuccessful relationships between the state and cocoa farmers. In this chapter, I will show that there are still dominant unjust local realities in rural cocoa producing communities that are "left behind", unresolved by the certification programme. What is disregarded by the certification programme includes relations and processes that shape the access status of farmers. I draw on the concept of social relation of production which is often theorised and discussed in the field of political economy, peasant studies and political ecology. The concept of social relation of production provides a background knowledge of what drives the peasant economy. I use it to understand who owns what, who does what and who gets what, with respect to cocoa farming among the certified Fairtrade farmers. With that understanding, I was able to know who loses what, why and how. I found that some farmers often lose all or a portion of their cocoa fields either temporary or permanently as a result of off-season poverty and other social emergencies. The unjust relations between farm owners and caretakers continue to exist. I argue that cocoa farming in the rural communities is characterised with winners and losers. Therefore, as long as this social injustice exists there is nothing ethical about the cocoa the firms seek to source through the certification programmes.

Title of the manuscript:

Changing access status of smallholders in cocoa land-use systems: An overlooked manifestation in sustainable agrarian transformation

5.1. Abstract

Chocolate firms have established market relationship with smallholder cocoa farmers in Ghana through their certification programmes. Their purpose is to manage sustainability at the cocoa supply chain. Associated with the management of sustainability is the provision of incentives by firms from which farmers derive a range of benefits. However, despite the benefits, the certification programmes contradict and disregard certain unjust relations and practises in rural cocoa farming. This paper aims at unpacking some of these injustices in cocoa farming under the ongoing certification programmes. Based on an empirical case study, we discovered that a certification programme which aimed to sustainably transform rural cocoa economy tends to focus less on existing local relations and conditions that cause dispossession of access rights in cocoa farm and produce winners and losers through processes such as outright sales of cocoa farms, labour contractualisations in sharecropping system and collateralisation of cocoa farms. We argue that misrecognition and contradictions of these unjust social relations and conditions of production by the certification programme is because the firm's programme focuses too much on improving crop productivity to assure a continuous supply of cocoa beans. The paper concludes that meaningful sustainability and more specifically social justice are achieved if the certification programmes consider safeguarding the livelihood of farm owners and caretakers with respect to the protection of their property and labour rights.

Key words: cocoa, access status, social relation, sustainability, agrarian transformation

5.2. Introduction

Private sector certification schemes have proliferated significantly in Ghana's cocoa sector over the past decade as a result of the expansion of the new market on ethical cocoa (Odijie, 2018). Associated with the certification schemes are alternative values and socio-economic objectives such as environmental sustainability, social justices, higher yields and income, fair market prices, innovation and technological capacity for smallholder farmers (Jaffee, 2007; Burnett & Murphy, 2014; Swinnen et al., 2010). Often certification programmes rarely achieve these new market values (Dolan & Humphrey, 2000; Evers et al., 2014; Krauss & Krishnan, 2016) because firms are often confronted with the market's conventional logic (Taylor, 2005). Firms aim at avoiding market risk and focus on appropriating more benefits than smallholders (Odijie, 2018; cf. Leach, 2008; Gereffi & Korzeniewicz, 1994). This occurs when firms' certification programmes for high value commodities like cocoa sidestep local agrarian social relations, processes and conditions which continue to shape farmers' labour status and produce winners and losers in producing regions (Neimark, 2018).

On the other hand, it is wrongfully claimed that external market interventions fail to sustainably transform smallholders' production systems because they are very inclined to their conservative values and thus, less receptive to new ways of farming and living (Scott, 1976, 1985; Netting, 1993; van der Ploeg, 2009, 2013, 2014). Hence, they are often regarded as "stubborn survivors" (Mortimer, 1984). More so, chocolate firms that run certification schemes must comply with the stringent state regulatory systems that specify terms and condition of firms' engagement with the smallholders, and that include the maintenance of existing local practices and conditions of production (Interview with COCOBOD official, 2021). As a result, it is difficult for firms to operate their certification programmes and achieve these alternative values and objectives, despite their recent corporate power in global food and agriculture governance (Arentsen et al., 2009).

In this paper, I show how (and why) certain local realities still persist in rural producing societies. The local realities are the relational practises that shape access status of smallholders under one ongoing certification programme. I focus on the social relations among farm owners and caretakers in cocoa farming to understand the local practices that affect farm owners who own the means of production and caretakers who

apply their labour to production (Ellis, 1993). I show that pre-existing local practises that characterise social relation of cocoa farming affect the access stability and security of farm owners and caretakers to farm fields, to productive resources, to income and to reserves in order to meet their needs, minimise risks, shocks and meet contingencies (Chambers, 1989; Frankenberger & McCaston, 1998). I argue that the local realities continue to exist because the firm's certification programme either disregards or contradicts them. I assume that when extant local social relations and conditions shaping farmers' access to cocoa land use systems are ignored in the operations of certification schemes, two main meanings or possibilities can be articulated.

First, such disregards can reinforce extant unequal social/power relations and generate winners and losers among smallholder farmers within the agrarian society. Secondly, these local relations and conditions are not considered because chocolate firms' certification programmes rather prioritise business-oriented benefits such as increase in cocoa yields and their continuous supply, meeting consumer demand of ethical cocoa at the expense of the pressing social realities of the smallholders (Krauss & Krishnan, 2016; Odijie, 2018). I argue and conclude that chocolate firms would certainly consider dominant social relations and conditions of production in the operation of the sustainable certification programmes if these local relations undermine the supply of cocoa beans to the chocolate industry. I highlight these hidden local production realities and recommend that they must be considered and ameliorated to make the supply of ethical cocoa via certification programmes more justifiable and guaranteed.

5.3. The concept of social relation of production

This paper draws on Chayanovian and Neo-Chayanovian scholars' ideas of peasant social relation of production (Chayanov, 1986; Ellis, 1993; van der Ploeg, 2009). These scholars conceive smallholders as social entities who engage in diverse form of social relations within their household units, locality, and with the state and the global capitalist economy to own land, mobilise labour, exchange resources and surplus to produce for the market and subsist the household units (Ellis, 1993; van der Ploeg, 2009; Robbins et al., 2020). This concept provides an understanding of who controls and maintains the ownership, and access to productive resources and distribution of benefits (Bernstein, 1979; Ellis, 1993; Bryant & Bailey, 1997; Bernstein, 2010).

The concept of social relation of production is generally understood as relations of ownership (who owns what), labour practices (who does what), benefit distribution (who gets what) and processes of usage or consumption (what do they do with it) (Bernstein, 2010, pp. 22–23). Frank Ellis (1993) refers to it as a socio-economic situation whereby different groups of people have access to productive resources and control what they produce in the society. This is a Marxian concept in political economy, and it is often used to understand and explain the contradictions in the capitalist economy with the focus on the relations between capitalists and producers or labours (proletariats) where capitalists appropriate, own, control the means of production including labour for persistent accumulation of wealth or property (Ellis, 1993; Harvey, 2005).

The concept of social relation of production is also used to understand the status and future of peasant farm production as peasant economy had become more dependent on or integrated with capitalists' market for the continuous supply of produce (van der Ploeg, 2009, 2013). Such integration and market dependency enable capitalists to use market instruments to control labour practices of peasants (van der Ploeg, 2009, 2013).

Social relation of production is also used to describe and analyse the ownership, control and access particularly in the peasant economy. In peasant settings, some actors own lands or farm fields while others are employed as labourers. This can occur within household units or among rural dwellers (Chayanov, 1986).

What drives the relationships among landowners/farm owner and labourers is the desire to satisfy their personal needs and their anticipation of the outside environment (Robbins, 2012). For instance, a peasant's ability to interact among groups or within households to access land and household labour is motivated by his/her personal subsistence needs (Chayanov, 1986). Social structures like class, age, religion, gender, ethnicity, unequal resource distribution, etc. can also facilitate or shape social relations, exchanges and influence individual agency and opportunities (Bernstein, 1979, 2010; Ellis, 2000; Berry, 1993). For example, less privileged class or subordinates invest in social relations by transferring benefits to superiors or doing things to establish trust in order to maintain access (Berry, 1993). Moreover, associated with social relations are the roles of institutions with their organisational capacities

such as rules, norms, values or conventions in ordering access and relations between individuals or among groups (Berry, 1989b, 1989a, 1997; Ellis, 1993, 1998, 2000; Sikor & Lund, 2010). The concept of social relation of production therefore drives on the idea that in different societies, and in different historical times there are dominant ways in which people relate in order to produce. However, these forms of relations among classes often produce inequalities and dispossession of property and livelihoods (Ellis, 1993).

This paper deals with the social relation of production within the peasant economy and its connexion with the capitalist market. Here, I focus on social relations among certified smallholder cocoa farmers within their local communities. Among the smallholder farmers, farm owners own the means of production, while caretakers apply their labour to productions. I show how and why pre-existing relations and practices continue to operate in the context of sustainability certification programmes to bring insecurity to farmers' ownership and deepen unequal access to cocoa farms. In this way, I extend the concept of social relation of production beyond its understanding of who owns what, who does what, who gets what and what do they do with it, to include who loses what, through what means and why? I stress that the persistent farmers' access insecurities and inequalities are exacerbated by chocolate firms' disregards of who owns the means of production, who apply labour to production, how are benefits distributed, what practices or processes influence access to cocoa fields and what reinforces the unequal relations between farm owners and caretakers. The pre-existing local realities are not considered in the operation of the certification programme because they pose less threat to the supply of cocoa beans to the firm.

5.4. Case study approach

The analysis of the contradictions and disregard of smallholder social relations by cocoa firms is based on a larger case study research that was conducted between 2018 and 2019. The case study focused on the extent to which a firm-led certification scheme was facilitating sustainability in rural cocoa production landscape in Asunafo-North region of Ghana. In this region, the lead firm, Mondelez International is operating with a Farmer cooperative society with membership of over 5000 fairtrade certified cocoa farmers under its Cocoa Life Programme. The objective of this certification programme

is to halt deforestation in and around cocoa farms, eliminate child labour, poverty and empower women by providing farmers with some bundle of incentives. A range of research instruments such as semi-structured interviews, in-depth interviews, participant and direct observations were deployed to collect data on topics such as diverse forms of farmers' motivations, relations of productions (among farmers, with the state and the private sector actors), farmers' production challenges, bundle of incentives and distribution of benefits and burdens, farmers' agro-environmental decisions and the governance of certification schemes in the Asunafo North certified cocoa producing region. Respondents included certified smallholder farmers, agronomic experts and managers of farmer cooperative society, local chiefs and elders and key officials of Ghana Cocoa Board in the region.

Thematic analytical technique was used to analyse the data. My analysis showed that the social relations of production (among the farmer groups, with the state and the lead firm) permeates many of the aforementioned topics. However, those social relations that pertain among farmers (especially between farm owners and caretakers) within their localities are mostly sidestepped in the operations of the certification programme, which I aim to articulate in this paper. I do this in the next section.

5.5. Behind the scenes of certification: Changing access status of farmers

This study discovers three major practises that shape access status of farm-owners and caretakers and deepen their unequal relations in cocoa farming communities. The processes include outright sales of cocoa farms, collateralisation of cocoa farms and labour contractualisations. A detailed account of the practices is presented below.

Outright sales of cocoa farms

In most rural cocoa growing communities, off-season poverty has been fuelling the outright sale of a part or a whole of cocoa fields. The certification incentives such as premium and training of farmers to engage in alternative livelihood activities like snail farming, fish farming, vegetable farming etc., are two main direct mechanisms employed by the firm to reduce poverty in the rural communities. The indirect mechanisms include the incentives (such as provision of agronomic inputs, knowledge and services) provided to the farmers to increase crop yields with the expectation of

getting higher income returns. However, while farmers experience a rise in their income through the certification programme, the off-season poverty persists and continues to drive outright selling of cocoa fields by farm owners. This is because the premium and increase in cocoa yields cannot offset the poverty or hardship in the off-season period. The alternative livelihood programme promoted by the certification programme is not new to the farmers. Most farmers do reserve plots of land to farm crops for food and sell surpluses in the market. However, volatile market and lack of access to productive resources discourage farmers from engaging in the alternative livelihood activities. A farmer lamented that:

> "…Yes, they normally organise training programmes for us. I once attended a training on how to do fish farming. But where is the land and other tools to do the fish farming…… It's all about money and the small amount from the cocoa is even not enough for our living for the whole year for me to invest it in fish farming."

Another one asserted:

> "All that they say is that we should engage in other activities. But when it is Wednesday, go to the market and see for yourself how cheap are food crops are. Traders from Accra and Kumasi come and buy them here cheaply, load them in big trucks and go and sell them costly over there. We had been doing other related farm activities for long time and we don't benefit much. I do remember out of anger and poor market price; a neighbour left his plantain to rot in his farm".

Farm owners often sell cocoa farms to potential buyers to finance the education of their wards or relatives, to fund migration, and to settle debt. Thus, they are not just subsistent farmers, their needs transcend beyond meeting household food requirement, shelter and clothing. The certification programme does prevent farmers from selling their farms and those who buy are not prohibited from joining the certification programme. Cocoa farms are comparatively preferred by potential buyers even in areas where fallow lands and abandoned cropland exist. This is because existing cocoa field are economic land use for ready accumulation of benefits. The selling and buying of cocoa farms largely affect caretakers. Most caretakers are not even notified about the transaction and transfer process between farm owners and the buyers to allow them to prepare and search for other means of livelihood beforehand. The potential buyers include rich farm owners, local elites and elders who in addition to their financial capabilities, rely on remittances from urban elites or relations abroad. It was widely acknowledged that purchasing of cocoa farms is better because buying ready cocoa farm plots extricates the new farmers from the labour burdens and high

production cost associated with the initial period of cultivating cocoa to its maturity which is usually between 3 and 5 years depending on the cocoa variety. Additionally, buyers desire to buy cocoa fields because many are doubtful of whether planting new cocoa seedlings will survive because of drought and volatile rainfall. These narratives suggest that the certification programme misses the local realities and particularly the priorities of the local producers despite its focus on incentivising farmers to produce "ethical" cocoa for the firm.

Collateralisation of cocoa farms and debt servicing arrangement

Also, farmers occasionally use either a part or the whole of their cocoa farms to secure loan from individual rich farmers, local elites and purchasing clerks. The loans are often associated with high interest, and they are normally sourced by farm owners during the off-season hardship. Farmers use the loans to finance apprenticeship, education and migration of their wards or relatives in larger towns and cities. When they are unable to repay, they eventually lose their farms to the creditors. It is indicated that rich farmers, local elites and most especially purchasing clerks deliberately offer higher interest loans to farm owners for future expropriation of farms. For instance, a farmer who has lost a portion of his cocoa field bitterly lamented that:

> ..those purchasing clerks are very insensitive. They have the money, and they capitalise on our hardships to take our farms... Taking loans from people is normal everywhere especially when you are in need. I needed money to pay university education fees for my niece. I searched for money everywhere but could not find it. So, I went to one purchasing clerk for a loan. He demanded high interest rates and indicated that I must pay the money within a year else I have to forfeit two acres of cocoa plot to him... I did not have any option than to agree to his demand... I have three acres of cocoa farms and the annual income from the produce cannot repay the entire loan in a year. I also need to take care of my family as well. It was a bad season for me that year that I could not even pay half of the money. I pleaded with him, but he disagreed. He took the two acres from me.... You can ask anybody around this and other communities they will tell you the similar stories about the purchasing clerks. Some of them even serve as middlemen to confiscate cocoa farms for local and urban elites by using the same tactics. There are those who will claim that they took the loan from urban elites but in reality, it is their own money, and after taking the farm from you they then employ caretakers and act as intermediaries between the caretaker and the supposed absentee farmer.

In some cases, creditors directly manage the debtors' farms themselves and take the proceeds for mutually agreed number of years as a repayment mechanism. This

happens when the farmer cannot pay the loan or when it is noticed by the creditor that the cocoa trees are cultivated on stool lands. In such situations, caretakers automatically lose their contract.

Predatory lending schemes have been in existence even before the certification programme. The programme prohibits farmers from using their cocoa fields as collateral. Farmers who do so lose their membership, and this happens only if the cooperative workers and the executive members of the farmer association discover it. However, some farmers continue to experience off-season poverty and hence very vulnerable to high-interest loans. The premium and other incentives of the certification programme that are aimed at increasing the income of farmers are less effective in reducing the off-season poverty of farmers.

Labour contractualisations and leakages

There is a pre-existing unequal labour contract relation between farm owners and caretakers. The contract arrangement between the owners and the caretakers is verbal and conventionally consists of two forms, *abunu and abusa*. The *abunu* and *abusa* may be contracted over matured farms, abandoned cocoa fields or new lands to be used to plant cocoa trees. With the matured farms (which is very common in the region), the caretaker and the farm owner may agree to share the annual proceeds either in equal halves (i.e. abunu) or the farm owner may give one third of the proceeds to the caretaker (abusa). Caretakers are responsible for the everyday farm management and maintenance activities such as pruning, disease and pest control, weeding, application of fertiliser, harvesting, fermentation, packing and drying of cocoa beans. They must also report to farm owners in case of any farm disturbances such as pest/disease outbreaks and protect the farm if possible, against illegal logging. The certification programme, however does not regard the existence and the role of caretakers. As a result, the programme mainly focuses on benefits flows (especially cash bonus) to only farm owners despite the caretakers' labour and investments in cocoa production and supply. But caretakers do receive inputs and are encouraged by the farm owners and cooperative workers to attend and participate in skill-upgrading training programmes. However, they do all these and at the end receive no additional income from the certification scheme. Many caretakers feel they are being cheated. For example, in the words of a caretaker:

> Yes, we know we are being cheated looking at the kind of work we do. You will work the whole year in the bush (*referring to the cocoa farm*) while your farm-owner will be living comfortably in Kumasi. Then after the harvest he will come and take more than half of the proceeds.

Another farmer indicated that:

> "It is the farm owner who receives those monies (*referring to the cash bonus).* I don't know how much he always gets but it is fair if at least he gives me small of it. He only brings agrochemicals to me and orders me to apply them on time."

A cooperative worker also affirmed that:

> "we usually advise farm owners to give them (caretakers) something from the cash bonus, but this is up to them. We absolutely have no control over their money. The programme does not allow that."

While caretakers are not considered in the distribution of cash bonus, they continue to bear certain production cost. For instance, according to the verbal contract arrangement, farm owners ensure that caretakers provide two drying mats every year (400 Ghana cedis=UD83) which is almost equivalent to a bag of cocoa (475 Ghana cedis=UD99 as of 2018). In some cases, they must pay the actual money associated with the drying mat to the farm owner. Some farm owners demand drinks and money value of one bag of cocoa from the caretaker as entry price. Those who lack these resources may be allowed to begin their contract but must accept and comply with the condition that the money value of the resources will be deducted from their share of the proceeds after the harvest and sale of cocoa beans. On the part of the farm owners, the certification programme takes away part of their responsibilities. The programme supplies the farmers with farm inputs like fertilisers and agrochemicals yearly as part of their premium.

Also, farm owners often discourage caretakers from engaging in other livelihood activities. This is because the certification programme and the farm owners focus more on crop productivity than the commercial prospects of other livelihood activities which do not benefit them. For instance, one farm owner stated that:

> I summoned one of my caretakers before some elders and the person who introduced him to me. He is worrying me because he has been doing rice and maize farming in addition to cocoa farming. The time that he is harvesting his rice or maize, that will be the time that he must weed, spray, prune or maintain the cocoa. He stays in the rice field driving birds away making him unable to pay proper attention to the cocoa to monitor whether there are some

insect/pest and disease infections or whatever. So, I have cautioned him that if this continues, I will sack him.

The attitude of the caretaker from the above statement clearly corresponds to one of the milestones of the certification scheme. That is to encourage farmers to embark on alternative livelihood activities as poverty reduction strategy. However, caretakers' drive to pursue other livelihood activities due to inadequate income from cocoa proceeds and in fulfilment of their subsistence needs jeopardize their tenureship rights. Another good example of farm owner-caretaker relationship and labour tenureship issues can be found in a narration by a wife of a caretaker below:

He did not tell us the number of years we were supposed to work with him. He said oh, I have given it to you, you can farm it. You can stay here as long as you want until you decide to move. There are two rooms in this house, and I don't stay here so you can use them. He continued to brag like that... They are all like that. They will use all forms of convincing language and you will believe that they are good people. That year we were heavily overburdened with weeds. We cut the weeds at their base and had to pull them from the top of the cocoa tree. The weeds were very matured and after weeding them, their seeds started to germinate when it rained. He claimed that he has never harvested even 6 bags before. But that year we harvested 7 bags.

Then he came whining that we were not weeding, and we have harvested this number of bags. We are lucky. He said, as soon as you came the cocoa trees have magically increased in yields even though you are not weeding. He said a whole lot of things. When we were plucking the pods from the tree, he also came with the harvester and started doing the same. He said, now I will come and stay and harvest my own produce. As soon as you see these signs, then you have to think about your future. He said many things, but we were quiet and did not mind him and kept on working as expected.

Then suddenly we heard that he has communicated to somebody to look for a caretaker for him. But that person has seen our hard work and how we had managed the farm well. So, then the conveyor told us that this is what your farm owner has said about you. But we have not seen the wrong you have done ever since you came here. When the pods reaped, they did not spoil, you harvested them on time. But this is what he is saying, and I cannot hide this from you before you become stranded to the extent that you will not know where to keep your belongings. So, I am telling you to look for another job. Then we also took the information well and looked for another job. So, before he decided to sack us, we had already gotten another farm to take care of. We packed our things and left his farm. So, he came in our absence. He eventually found us and said that we should harvest the plantain, sell them and keep his money for him. So, when he came, I gave his money to him and he did not say anything and turned away. So, there are some farm owners who will deceive you. Just like

> the one we are working with now. He will tell you, oh stay here. I will not sack you. They are all lies. As soon as the farm is properly renovated and become productive again, he will tell you to go away. Once you know that the farm-owner can make unannounced claims of his/her farm at any time, you have to use ways and means to get something for yourself.

Since caretakers feel exploited, they devise ways and means strategy to steal some of the proceeds. They do this either alone or in connivance with purchasing clerks who double as intermediaries between absentee farm owner and the caretaker. Ethical cocoa remains unethical if exploitation, unfairness and theft characterise social relations of cocoa farming.

5.6. Discussion

This paper uncovered the contradictory relationships between market interventions programmes and local production realities. More specifically, the paper showed how a certification programme contradicts and disregards local realities most especially the relations and practices that facilitate the loss of ownership, access and labour rights of farm owners and caretakers in cocoa fields. The concept of social relation of production provided perspectives of understanding who owns what, who does what and who gets what? With this, I was able to unpack who loses what, why and how under the ongoing certification programme.

The paper found that farm owners who own cocoa fields often find themselves in socio-economic hardship mostly during the off-season period which shape access stability and security in cocoa fields. This occurs because the certification programme that aims to promote socio-economic justice has not been able to meet the priorities of the local producers to offset off-season poverty. For example, the inability of the premium under the certification programme to eliminate off-season poverty leads to the sale and appropriation of farms by rich farmers and purchasing clerks due to their financial standing. Such appropriations displace the property rights of farm owners and also caretakers' labour or usufruct rights in cocoa trees. This indicates the deprivation of farmers economic autonomy and social dignity (Fay & James, 2008).

Also, the changing access stability of farm owners and caretakers occurs because the smallholders are not able to access productive resources to undertake the livelihood diversification strategies or alternative livelihood programmes championed by the

certification scheme to ameliorate hardship. It is also because the certification programme fails to recognise that smallholders' needs go beyond their basic needs, and that the recent rise in their annual income cannot meet all their needs. This is the reason why farm owners sell their cocoa fields or acquire high interest loans to finance education, migration, apprenticeship and settle debt. The use of cocoa fields for debt servicing reinforces the existence of hardships among the farmers and the inability of the certification programme to eliminate the hardships. Hence, debt manifests as an "important lever of accumulation, differentiation and labour control" (Fairbairn et al., 2014, p. 653).

Caretakers are mostly at the losing end when farm owners forfeit their ownership of cocoa fields or when their means of production become less stable. Additionally, despite its limited sufficiency, the certification programme focuses more on distributing cash bonus to farm owners to the detriment of caretakers who invest their labour and incur some production costs. Farm owners' pursuit of higher cocoa yields also interfere with the caretakers' desire in undertaking other livelihood activities. These unequal relations further drive some caretakers to steal cocoa beans which in essence remains unethical in a certified production landscape.

The argument of this paper is that ownership and labour rights of smallholders are not secure because the firm's certification programme focuses more on market benefits. In view of this, the certification scheme prioritises economic upgrading where an emphasis is placed on incentivising farmers to produce more certified cocoa beans for the firm (Laven, 2011; Evers et al., 2014) rather than social upgrading which centres on alleviating the working conditions of suppliers and providing them with rights (Barrientos et al., 2011; Barrientos & Visser, 2012). As a result, farmers have unstable livelihoods. This suggests that the certification programme has a skewed interests and priorities because it is used by firms to reposition themselves along the supply chain to accrue more benefits (Bair, 2009; Krauss & Krishnan, 2016).

Firms would certainly consider resolving these relations and practices aptly if they pose threat to the supply of cocoa beans. Krauss & Krishnan (2016) provided a similar case of how a lead firm prioritises commercial or market benefits such as high-quality crops, crop yield and volumes, safeguarding supply, reputation, traceability and food safety more than other socio-economic and environmental benefits at the local cocoa

producer level in Nicaragua. Raynolds (2009) argues that often the underlying priorities of firms shape the kind of relationship they establish at the supply chain. Such mismatch by firms represent a form of marginalisation of local producers (Dolan & Humphrey, 2000; Evers et al., 2014). This is why despite the transformation along the value chain by the certification scheme, fair market relations between firms and producers have not been resolved (Barrientos et al., 2008; Barrientos et al., 2011; Barrientos, 2013, 2019; Grabs & Ponte, 2019). This changing access status of smallholders is not because the smallholders are less receptive to new ways of doing things brought about by the certification programme. Rather it is because firms follow particular path of engagement with local economy in order to gain market benefits than distributing their resources in dealing with social relations and practices that have little effect on their business.

5.7. Conclusion

The paper demonstrated that certain local relations and practices among smallholder farmers and labourers influenced their access stability and security statuses in cocoa farms where caretakers are more at a disadvantage position. Particularly, I argue that sustainable cocoa certification scheme pays little attention to conditions regarding the outright sales of cocoa farms, labour contractualisations in sharecropping system and collateralisation of cocoa farms. These cause inequality and dispossession of farms. In the context of social justice as an important element of sustainability, such inequalities and dispossession are unjustified since they are not configured to benefit the most disadvantaged in the society (Rawls, 1999). The diversification of household economy through the alternative livelihood as promoted by the certification programme has not yielded the intended results of reducing rural poverty due to lack of access to the needed productive resources. The exclusion of production resources in the alternative livelihood agenda appears to be a "discriminating intervention" (Scott 1998, 3) to avoid competition of other land use practises, to perpetuate or increase attention to and dominance of the cocoa economy. Moreover, despite the facilitation of access to these productive resources and markets, leakages of proceeds through illegitimate means still exist both at the production and marketing point of cocoa beans.

It should be noted that farms enclosure by rich farmers, purchasing clerks, local and urban elites is a prototype of "accumulation by dispossession made possible by the

certification programme (Harvey, 2003, p. 137). And such dispossession is a "social death" or a form of "property induced invisibility" on the part of cocoa farmers as their subsequent social dilemmas associated with loss of livelihood will not be known (Atuahene, 2007, p. 1425; Mollett & Kepe, 2018, p. 4). Cocoa certification schemes should be redefined to take a closer look at the diversity of producers, which includes farm owner and caretakers or labourers, their social relations that define distribution of benefits and tasks. Livelihood enhancement programmes should rather be operated to safeguard livelihood security of diverse farmers in terms of the protection of access and labour rights.

5.8. Postscript

This paper contributes to the debates about sustainability transitions in the commodity production systems. Stakeholders of the chocolate industry such as chocolate firms, NGOs, environmental conservationists, and the media, place much focus on eliminating sustainability challenges such as deforestation, child labour, gender inequality, poverty, lower yields and lack of inputs at the cocoa supply chain. This is also the same with scholars of global cocoa value chain whose studies are often centred on the aforementioned sustainability challenges. Less attention is given to the changing access status of smallholders in cocoa farming. This paper brought to attention the need to look at other social issues in cocoa farming such as the changing ownership and labour rights of farmers in cocoa farms that are mostly hidden and less talked about. The existence of these unjust social issues at the supply chain indicates that there are misplaced priorities of firms in the process of social, economic and environmental upgrading at the supply chain. Sustainability transition in the production system is a continuous process, hence, it is important to highlight the "left behind" in the transition process. Firms and stakeholders of the chocolate industry need to look at the disregarded social issues in cocoa farming else the sourcing of ethical cocoa through certification programmes will still remain questionable. One aspect of the firm's certification programme is the promotion of conservation in and around cocoa farms. In the next chapter, I explain the forces that influence the conservation of shaded tree on farms. I unpack the drivers of tree conservation on farms to highlight the potential of certification programmes facilitating ecological transition in cocoa production system.

A farmer trying to conserve shaded trees on cocoa farms with huge cost of maintaining the cocoa trees
Picture by the Author, 2018

Chapter Six: Ecological changes in smallholders' cocoa fields

6.0. Preface

This chapter focuses on the conservation of shaded trees in cocoa farms. I examine what influences the maintenance and absence of shaded trees on certified cocoa farms in the rural cocoa producing communities. This is aimed to understand whether the certified farmers are transitioning from cocoa monoculture to cocoa agroforestry or not. The focus of this chapter is based on the commitments of both private and public actors to achieve environmental sustainability in smallholders' production systems via cocoa certification programmes. However, little is known about the forces that influence the potentials of certification schemes to promote conservation of biodiversity most specifically shaded tree species in cocoa production systems in Ghana. The first section of this chapter deals with the shaded tree species diversity in cocoa farms. The second section details how immediate contextual drivers shape conservation or removal of shaded tree species on farms. Then later I discuss how these drivers are linked to the historical and current political-economic forces. I argue that cocoa agroforestry initiatives promoted by the certification scheme additionally sharpen the ongoing power struggles between the state and the local communities over the control, ownership and use of trees in cocoa farms. Therefore, the success of tree conservation on farms depends on how the specific contextual drivers are considered in the framing of certification programmes.

Title of the manuscript:

Sustainable land use transition towards cocoa agroforestry in Ghana: What are the potentials of private sector certification schemes?

6.1. Abstract

Chocolate firms have committed to promote conservation of trees in and around smallholders' cocoa farms via their cocoa certification programmes. Yet, little is known about what influences the potential of cocoa certification programmes to promote ecological transformation in cocoa production systems of smallholder farmers. This paper draws on the chain of explanation framework to explain the chain of influences that shape the conservation of trees in cocoa farms. This paper shows that farmers' conservation practises in cocoa farms are shaped by diverse factors such as hybrid cocoa tree variety, rehabilitation of cocoa farms, access rights in trees and labour relations, illegal logging, proliferation of small-scale sawmill and timber concessions policies of the Forestry Commission. The persistent influence of these drivers is as a result of certain ongoing political-economic forces that are also historically constructed. I argue that while the certification programme has the potential to promote cocoa agroforestry, these underlying drivers impede its progress and success. I further argue that cocoa agroforestry initiatives promoted by the certification programmes additionally sharpen the ongoing power struggles between the state and the local communities over the control, ownership and use of trees in cocoa farms. Farmers should not be blamed for slow transition towards cocoa agroforestry system. Rather the transformation process would be achieved sustainably by understanding and taking into account the historical and current social relations, production ideas, political, economic and environmental dimensions of cocoa production systems.

Key words: Cocoa agroforestry, certification, sustainability, smallholder farmers

6.2. Background

Chocolate firms have made deforestation-free cocoa supply chain commitments through their sustainability and certification programmes in producing countries such as Ghana and Cote d'Ivoire. Their aim is to halt cocoa expansion in forest reserve areas and to promote smallholders' adoption of cocoa agroforestry, whereby diverse shaded trees add to the biodiversity of cocoa farms (Odijie, 2018; Krauss & Barrientos, 2021). These commitments and the associated programmes are driven by global demand of zero-deforestation cocoa farming, ethical chocolate products and the need to meet the Paris Agreement and United Nation's Sustainable Development Goal 15[25] by 2030 (Mva & Lescornec, 2018).

However, recent events and intelligence reports highlight some challenges that undermine the potentials of certification programmes to promote forest conservation in cocoa production landscape. For instance, the government of Ghana and Cote d'Ivoire recently suspended certification programmes that aimed at deforestation-free cocoa farming. The suspension came about because some firms that run certification programmes refused to pay the $400-a-tonne Living Income Differential (LID) imposed by the two countries (Aboa & Angel, 2020; Munshi & Terazono, 2020; Terazono & Munshi, 2020). Additionally, Lumina Intelligence Report claims that pervasive poverty among smallholders in West Africa undermines tree conservation on farms. This is because cocoa farmers would need about $1000 per hectare to transition from cocoa monoculture to agroforestry and must have to wait between 5 and 10 years to benefit meaningfully from the new system (Slavin, 2020). Furthermore, Ethical Corporation has indicated that lack of traceability measures such as global positioning system (GPS) mapping, satellite-based monitoring systems and updated maps make the combat of deforestation difficult for companies in and around cocoa farms (Slavin, 2020).

From the political ecology point of view, the above challenges—interruptions by state power, projected cost of transition and lack of technologies—are less sufficient to

[25] Goal 15 is to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

explain what influence tree conservation practises in certified cocoa production fields (cf.Robbins et al., 2015, 2020), which can inform and transform private firms' future sustainability efforts (Folke et al., 2019). As a result, little is known about the potentials of certification programmes to promote and achieve a transition towards deforestation free-cocoa farming. This paper aims to examine the forces that influence the conservation of shaded trees in certified cocoa fields. The paper fills the knowledge gap regarding certification programmes and their capabilities for ecological transition in cocoa farms.

6.3. Introduction

Conservation of trees in commodity production landscape like cocoa, coffee, rubber or arecanut are documented by land use change scientists. Through quantitative instruments and remote sensing techniques, expansion and decline of forest cover in relation to crop production are identified and analysed (Karanth & DeFries, 2010; Robbins et al., 2015). For instance, high resolution global map shows that tropical regions including Africa are experiencing the highest ratio of forest loss as compared to forest gain (Hansen et al., 2013) with agriculture being one of the main drivers (Ramankutty & Foley, 1999; Asner et al., 2004; Foley et al., 2005). More specifically, in 2018, remote sensing and satellite data showed that Ghana is losing its forest cover at a fastest pace than any other country in the world with cocoa farming expansion as the leading cause (Asiedu, 2019). These findings by land change scientists often drive and intensify state policy instruments and market-driven forest conservation interventions (Veldkamp & Lambin, 2001; Lambin et al., 2001; Schroth & McNeely, 2011) like certification programmes and sustainability initiatives, especially in most tropical tree crop fields which occupy a larger tract of land (Robbins et al., 2015).

However, political ecologists challenge many of such studies on conservation of trees in tropical commodity landscape. They argue that these studies often do not adequately explain the forces that influence ecological changes in commodity production landscape (Fairhead & Leach, 1996; Leach & Mearns, 1996; Leach & Fairhead, 2000; Robbins et al., 2015, 2020). This is because the methodological and explanatory approaches of land change scientists constrain them to acknowledge the forces that operate beyond the immediate local context (Robbins, 2004, 2012). Additionally, land change scientists place more attention to forest cover changes (Turner et al., 2007; Turner & Robbins,

2008; Brannstrom & Vadjunec, 2014) than the maintenance and absence of tree species in tropical high value tree crop production systems like cocoa and coffee (Robbins et al., 2015, 2020). This is because the fine scale at which ecological changes in tropical tree crop fields occur is difficult to be detected by large-scale surveys and remote sensing (Mendenhall et al., 2011). For instance, land use change scientists rarely address conservation decisions of smallholder farmers, which can be influenced by culture (le Polain de Waroux et al., 2021) political and economic factors such as economic incentives, cost of input, policies, etc. (Robbins et al., 2015). The consequence is that conservation intervention programmes, which draw solely on land change studies or pattern mapping of forest cover change could fail (Fairhead & Leach, 1996; Leach & Mearns, 1996; Leach & Fairhead, 2000).

This is why there is a resurgence of political ecology studies in recent times in high value tropical commodity landscape that explain tree conservation on farms by linking farmers' land and labour strategies to the state, the market and other external forces (Hausermann, 2010, 2014; Robbins et al., 2015, 2020; Willis & Johnson, 2020). This paper contributes to this political ecology scholarship with a focus on conservation of trees in cocoa farms. The paper analyses how farmers' decisions to conserve shaded trees (or not to conserve shaded trees) under certification programmes are shaped by their land use and labour practices in relation to the state and the market forces. The purpose is to understand how local and external relations influence the potentials of firm-led certification programmes to promote cocoa agroforestry.

The paper acknowledges that pre-existing spatial and ecological conditions such as size of farms, cocoa variety, and socio-economic factors like labour availability, land ownerships, access to inputs, local knowledge, farmers experience, etc. are potential determinants of shaded tree conservation on farms and must be taken into account in relation to the state and the market (cf. Robbins et al., 2015, 2020; Rocheleau & Ross, 1995). Also, smallholders factor in the cost and benefits of on-farm tree conservation (such as crop productivity, pests, diseases, drought, etc.) in their land use and labour decision-making processes. For instance, Rocheleau & Ross (1995) indicated that with most agroforestry initiatives, trees generate varied benefits and burdens on livelihoods. Trees are also resources that could be exploited by more powerful actors. Aside from the on-farm cost and benefits, smallholders may also consider conservation of trees on farm

fields as means to maintain access to land, livelihoods and secure power (Rocheleau & Ross, 1995; Robbins et al., 2020). For instance, in Gambia, the transition towards agroforestry facilitated by aid organisation in the name of sustainable development altered gender power relations, and also enabled men to recapture power, land rights, labour of women which eventually dispose women land use activities in Gambia (Schroeder, 1997, 1999; Takane, 2001). This paper explains similar drivers of tree conservation in cocoa fields by unpacking their local and external linkages.

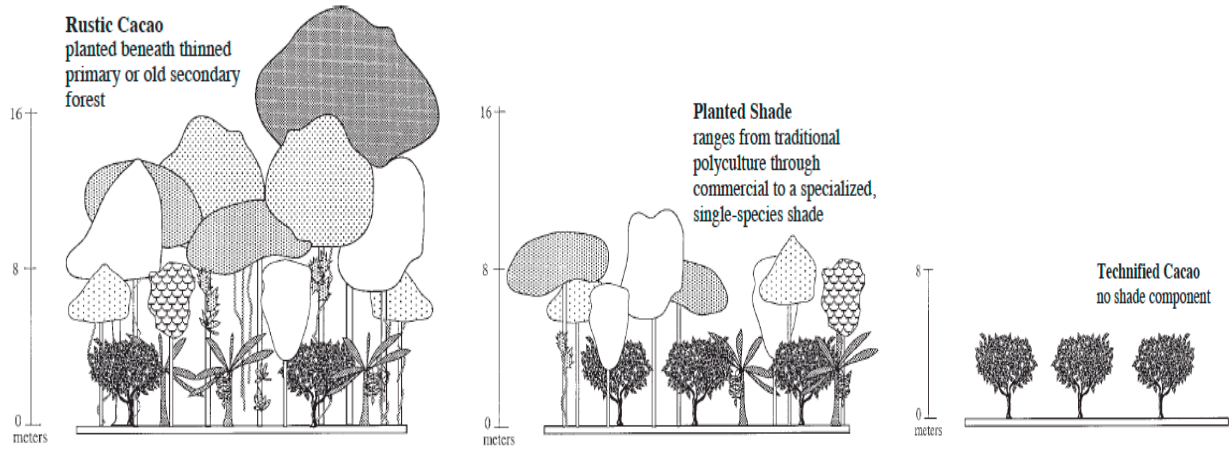
6.4. Cocoa agronomic system

Cocoa fields in Ghana are predominately cultivated by smallholder farmers on small scales with average farm size ranging from 3 to 7 hectares (Obiri et al., 2007). Farms could be managed either by the farm owner or caretaker (Robertson, 1982; Amanor, 2001), and are normally cultivated on private, family, stool or customary lands (Amanor, 1994; Amanor et al., 2008; Amanor, 2010). There has been cocoa expansion into the state forest reserve (Amanor, 1994). The Forestry Commission either destroys these illegal cocoa fields in the forest reserve or demarcate them as "admitted farms", and allow farmers to continue managing the admitted farms (Owubah et al., 2000; Acheampong et al., 2019).

The major cocoa varieties that farmers plant include Amelonado (locally called Tetteh Quarshie), F3 Upper Amazon and hybrid cocoa. Farmers either plant the cocoa seed or the seedlings, but it is highly recommended by the Cocoa Health and Extension Division (CHED) of Ghana Cocoa Board and the Agronomic experts of the farmer cooperative society that farmers plant cocoa seedlings instead of the seeds. Sometimes, farmers intercrop different cocoa varieties on the same piece of land (Personal field observation, 2018). Again, CHED and the Agronomic experts of the farmer cooperative society advise the farmers to plant the hybrid cocoa variety (Interview with an official of CHED, 2018).

Characteristic of the cocoa production landscapes of Ghana are three different system of cultivation (Figure 12). They include rustic or traditional shaded cocoa, planted shaded cocoa and cocoa monoculture system—which is mostly regarded as full sun or zero-shade cocoa production system (Rice & Greenberg, 2000; Gockowski et al., 2010). Irrespective of the system that farmers adopt, CHED advises farmers to plant and

maintain 1,111 cocoa trees per hectare with a space interval of 3mx3m between the cocoa trees. This applies to all cocoa varieties (Interview with an official of CHED, 2018).



Source: Rice and Greenberg (2000)

Figure 12: The three main types of cocoa fields.

The rustic cocoa production system is often associated with relatively maximum level of diverse forest shade because farmers plant their cocoa trees under a thinned primary or older secondary forest (Wood & Lass, 1985; Ruf & Siswoputranto, 1995; Ruf, 2011). It is generally conceived as low-yielding system, and farmers who adopt it use minimal level of agronomic input. With the planted shaded system, farmers clear forest but maintain and manage remnant trees as shades to support the cocoa trees. In some situations, farmers may plant shade trees themselves or nurture the naturally growing tree saplings (Ruf & Siswoputranto, 1995; Rice & Greenberg, 2000; Ruf, 2011). Planted and conserved shaded trees could comprise timber trees species (Obiri et al., 2007). Farmers may also intersperse the cocoa trees, the shaded trees with other tree crops like orange, avocado, cola, banana, etc. (Rice & Greenberg, 2000; Gockowski et al., 2004). In some instances, the shaded trees may be dominated by one or few tree species. This often happens at the initial planting stage of cocoa seeds or seedlings where farmers plant fast-growing and nitrogen-fixing legumes such as *Erythrina spp., Gliricidia sepium, Cassia,* and *Inga spp*. The planted shaded system is associated with some moderate application of agrochemicals (Rice & Greenberg, 2000). The zero-shade cocoa system completely contrasts the two shaded systems. It involves planting of cocoa trees by smallholders with little or no shaded trees. It is often associated with intensified use of input and high crop yields (Gockowski & Sonwa, 2007; Gockowski et al., 2010, 2013).

Despite their connections with deforestation, cocoa fields still possess the potential for forest restoration and conservation while supporting livelihoods of smallholders. This is because cocoa is a chief crop in tropical forest regions especially in Ghana, and have the ability to accommodate forest trees (Gockowski et al., 2004; Gockowski & Sonwa, 2007; Niether et al., 2020). This is why most certification programmes in Ghana promote and support the planted shaded system whereby smallholders who practise zero-shade or full sun cocoa production systems are encouraged to maintain naturally growing trees and additionally plant economic shaded trees such as *Terminalia superba* and *Khaya* spp in and around cocoa fields. However, there is still little knowledge and limited explanation about the absence or maintenance of shaded trees in farmer's cocoa fields under ongoing certification programmes.

6.5. Explanatory framework

This paper adopts the chain of explanation from the field of political ecology to explain ecological changes in cocoa fields. The chain of explanation is an explanatory approach or principle with broad application (Benjaminsen & Svarstad, 2021). Inspired by Vayda's (1983) progressive contextualisation approach, Blaikie and Brookfield (1987) originally introduced the chain of explanation to identify and explain the causes and effects of environmental change (Vayda, 1983; Blaikie & Brookfield, 1987; Robbins, 2012; Benjaminsen & Svarstad, 2021). Its application involves the study and explanation of the land use practises of smallholders or land managers, why they use the land in a particular way, and the forces or conditions (most essentially produced by power relations) that influence their land use activities. These forces are traced from the immediate locality of the smallholders (e.g. their relationships with each other, other land users and group in a society that affect their land use practises) to more distant regional, national and global scales (Blaikie & Brookfield, 1987; Rangan & Kull, 2009; Robbins, 2012; Benjaminsen & Svarstad, 2021).

Such an explanatory approach considers power(s) as linear or rigid hierarchies operating vertically from one scale to effect change or produced outcomes in another scale (Robbins, 2004; Rangan & Kull, 2009). However, in reality power may operate in different directions as a web of relation (Rocheleau, 2008; Benjaminsen & Svarstad, 2021). Initially, the web of relation was introduced as a critique to the chain of explanation (Rocheleau, 2008). For instance, Rocheleau (2008, p.724) argues that

> "(t)he centre of gravity is moving from linear or simple vertical hierarchies (chains of explanation) to complex assemblages, webs of relation and rooted networks, with hierarchies embedded and entangled in horizontal as well as vertical linkages"

However, the web of relations has been subsequently integrated with the chain of explanation to explain a chain of influences about a phenomenon (Mariki et al., 2015). This is because the web of relations does not disregard some important elements of chain of explanation such as the geographical scales of drivers producing or influencing an event or phenomenon and the connections of the drivers. (Rocheleau & Roth, 2007; Robbins, 2012; Bryant, 2015; Benjaminsen & Svarstad, 2021). It also maintains power as a central element behind the drivers (Mariki et al., 2015). These key elements are what this paper considers. The paper incorporates the ideas of the "chains" and the "webs" to explain the forces that influence the conservation of shaded trees on farms.

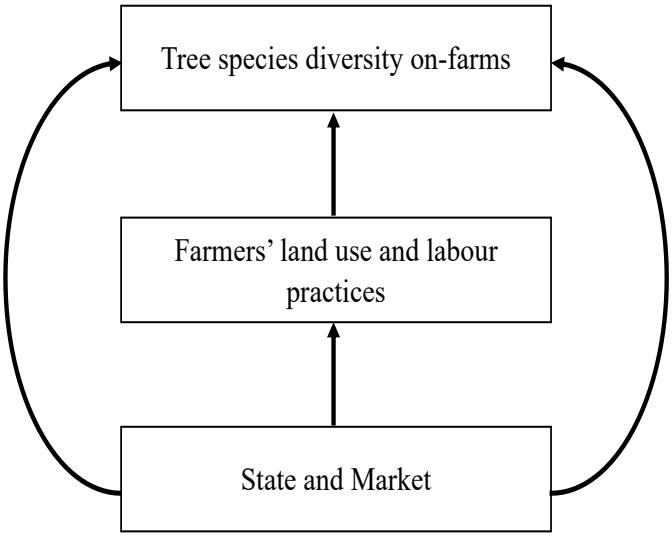


Figure 13: Explanatory/Conceptual framework

The results and discussions in this paper are conceptualised and simplified in Figure 13 (See Figure 16 for details). The paper shows that the conservation of tree species in cocoa fields are influenced by the land use and labour relation strategies of smallholders, which are fundamentally driven by the state and market forces. The paper has three levels of analysis. The first level of analysis focuses on tree species diversity in cocoa farms. The second level of analysis focuses on certified farmers' land use practises and labour relations in the rural cocoa producing communities. Here, I analyse and explain the forces that encourage or discourage farmers to conserve or remove trees on farms.

The last level of analysis explains how farmers' land use decisions, relations and labour practices are linked to the state and market powers (i.e. the political-economic forces).

This paper demonstrates that the operations of the state and the market directly influence the maintenance or erosion of trees in cocoa farms rather than indirectly through the farmers. Thus, the absence of trees on farms are not exclusively a result of operational scalar sequence and effects of power from the state and the market to influence farmers' land use decision. Rather, state and market power sometimes operate directly to shape existence of trees on farms (i.e. bypassing influence on the land managers or smallholders) (Figure 13). For instance, as it will be explained subsequently, the absence of trees on cocoa farms is as a result of the state facilitating logging concessions. This is because the smallholders do not have control of shaded trees on their farmers. This contrasts the analysis and explanation of agro-environmental decisions of farmers that usually stresses the chain of influences linking political and economic forces, to producer decisions, and to agroforestry outcomes (Robbins et al., 2015, p. 78). This indicates that the explanatory framework and the analysis of this paper typify both linear chain of power relation and a web of relation (Rocheleau, 2008; Benjaminsen & Svarstad, 2021). The paper further argues that these firm-farmer relations via certification programmes regarding the conservation of trees in cocoa production system reinforce the power struggles between the state and the farms over tree ownership rights and governance.

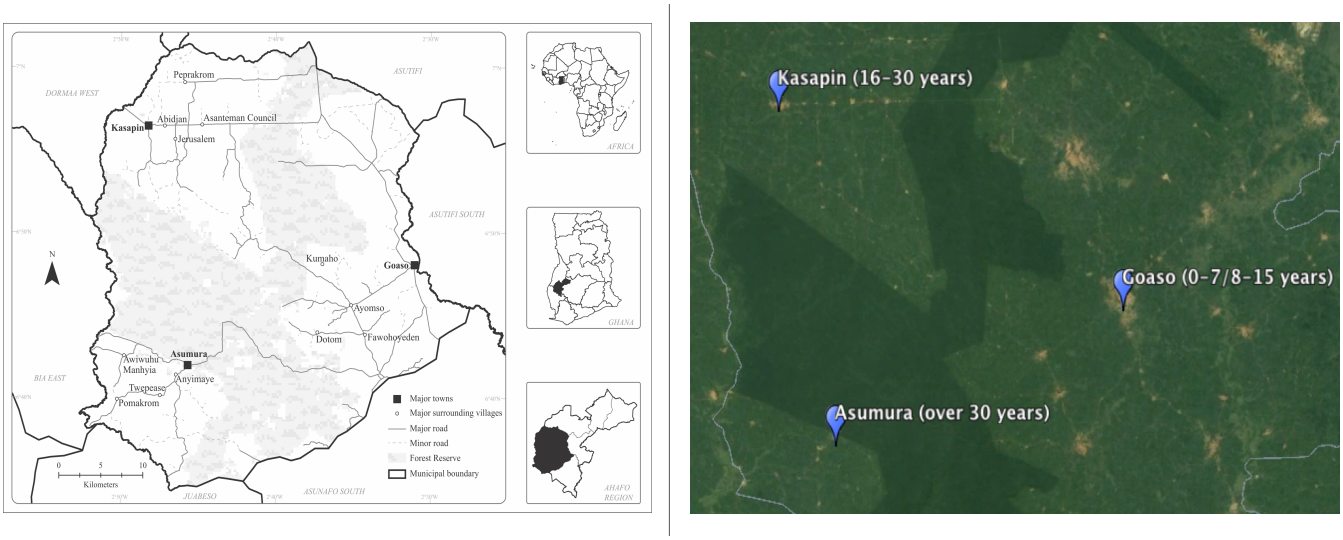


Figure 14: Study areas and the classification of production areas according to the average age of cocoa trees.

6.6. Methods and study context

The analysis and explanation of shaded tree conservation and variations in cocoa fields draw on field data of a study conducted in 2018. The study was conducted in Asunafo-North of Ghana where Mondelez International is operating its certification programme, that is the Cocoa Life programme. It is the largest certification programme in the area. It has enrolled over 5000 certified farmers and operate in 67 rural communities. The fieldwork study was undertaken in three major production areas in Asunafo-North namely Kasapin, Asumura, Goaso and their surrounding villages (Figure 14). I focused on certified cocoa fields as entry points to understand how farmers respond to the agroforestry practises prescribed by the certification programme.

The study involved a total of 45 farmers randomly selected for semi-structured interviews from the three selected production areas and the surrounding villages. Additionally, I selected 15 farmers and 3 respondents respectively from CHED of COCOBOD, Forestry Commission and Agronomic expert of the farmer cooperative society for in-depth interviews. The interviews were also followed by a visit to cocoa fields where farmers' narratives, perspectives, tree species identification and counting were recorded. Farmers provided the local names of the tree species whose botanical names were later identified by the Forestry Commission of Ghana.

The interviewer questioned and recorded data on the socio-demographic characteristics of the certified smallholders, the variations of cocoa crop variety, non-timber forest products (NTFP), food crops, fruit trees and the shade tree species in their farms. The interviews with the farmers placed significant focus on the names of shaded trees, the number of shaded trees in individual farmer cocoa fields and why some species are maintained while others are not. I also asked farmers about the past and current land use practises and labour relations to find out whether they have significant effects on conservation of trees on farms. I additionally considered to find out farmers' production, labour and farm maintenance relations with the Ghana Cocoa Board, the Forestry Commission, the Farmer cooperative society and certifying body of the certification programme. Rule systems of the state and the certification programme such as the production and environmental standard practices, forest laws, tree rights, number of tree species per hectare requirements, conventions regarding desirable and undesirable trees species, etc. were explored in relations to their effects on conservation

trees in cocoa farms. I then decided to explore the political economy in order to understand the external forces that promote or impede farmers' land use decisions to conserve or remove shaded trees on their farms. I did so through interviews with the Ghana Cocoa Board, the Forestry Commission and some key experienced farmers. I additionally derived data from the review of the literature to understand the external forces (state and market power) that influence farmers' land use and labour practices and tree conservation on farms.

Descriptive statistics and thematic analysis were used to analyse the data. I first analysed the number of shaded tree species on the sampled cocoa farm. The agroforestry standard with respect to shaded trees for cocoa in Ghana requires that farmers conserve between 15 and 18 "desirable trees" per hectare or (6 and 10 trees per acre). I analysed the number of shaded trees in cocoa fields in relation to this agroforestry standard. The initial analysis of how many trees certified farmers maintain on cocoa farms provided a generalised understanding of the ecological state of certified cocoa fields.

Variable	**N (%)**	**Cocoa Crop variety**						**Number of trees in farm**					
		Old (%)	Amazonia (%)	Hybrid (%)	Mixed (%)	LR (df)	p-value	Desirable trees [Mean (SD)]	Undesirable trees [Mean (SD]	Unknown [Mean (SD)]	Total	Test statistic (df)	p-value
Gender						2.663 (3)	0.446					-0.189 (58)	0.851
Female	13 (21.7)	0 (0)	0 (0)	10 (16.7)	3 (5.0)			11.6 (5.65)	3.1 (2.60)	3.5 (3.10)	18.2 (9.43)		
Male	47 (78.3)	1 (1.7)	4 (6.7)	34 (56.7)	8 (13.3)			10.4 (5.72)	3.0 (2.77)	4.2 (3.21)	17.6 (9.86)		
Education						6.326 (9)	0.707					1.869 (3, 56)	0.145
No formal education	2 (3.3)	0 (0)	0 (0)	2 (3.3)	0 (0)			12.5 (0.71)	1.5 (0.71)	2.5 (0.71)	16.5 (2.12)		
Primary	47 (78.3)	1 (1.7)	4 (6.7)	33 (55.0)	9 (15.0)			11.3 (5.69)	3.2 (2.87)	3.9 (3.15)	18.4 (9.76)		
Secondary	6 (10.0)	0 (0)	0 (0)	4 (6.7)	2 (3.3)			10.7 (5.32)	3.8 (2.32)	6.0 (4.43)	20.5 (11.18)		
Tertiary	5 (8.3)	0 (0)	0 (0)	5 (8.3)	0 (0)			3.8 (1.64)	1.2 (0.45)	3.4 (1.34)	8.4 (2.61)		
Residence						2.663 (3)	0.446					**-3.042 (58)**	**0.004**
Native	13 (21.7)	0 (0)	0 (0)	10 (16.7)	3 (5.0)			6.6 (4.63)	1.7 (1.18)	2.6 (1.66)	10.9 (5.12)		
Migrants	47 (78.3)	1 (1.7)	4 (6.7)	34 (56.7)	8 (13.3)			11.7 (5.47)	3.4 (2.90)	4.4 (3.39)	19.6 (9.85)		
Farm size						6.476 (6)	0.372					**12.842 (2, 57)**	**< 0.001**
Less than 5 acres	12 (20.0)	0 (0)	0 (0)	11 (18.3)	1 (1.7)			4.7 (2.84)	1.0 (1.04)	2.5 (1.68)	8.2 (3.71)		a
Between 5-10 acres	37 (61.7)	1 (1.7)	2 (3.3)	27 (45.0)	7 (11.7)			11.1 (5.41)	3.1 (2.48)	4.4 (3.36)	18.6 (9.48)		b
More than 10 acres	11 (18.3)	0 (0)	2 (3.3)	6 (10.0)	3 (5.0)			15.5 (2.42)	5.2 (3.16)	4.4 (3.47)	25.1 (6.56)		c
Type of farmer						4.100 (9)	0.905					0.828 (3, 56)	0.484
Landlord	2 (3.3)	0 (0)	0 (0)	2 (3.3)	0 (0)			5.0 (0)	1.0 (0)	2.0 (0)	8.0 (0)		
Sharecrop tenant	2 (3.3)	0 (0)	0 (0)	2 (3.3)	0 (0)			8.5 (2.12)	1.5 (0.71)	5.0 (0)	15.0 (1.41)		
Farm owner	40 (66.7)	1 (1.7)	2 (3.3)	29 (48.3)	8 (13.3)			10.7 (5.95)	3.1 (2.69)	4.0 (3.35)	17.8 (9.82)		
Caretaker	16 (26.7)	0 (0)	2 (3.3)	11 (18.3)	3 (5.0)			11.5 (5.38)	3.3 (3.02)	4.4 (3.10)	19.1 (10.14)		
Crop land use history						5.820 (9)	0.758					1.387 (3, 56)	0.256

Primary forest	23 (38.3)	1 (1.7)	1 (1.7)	17 (28.3)	4 (6.7)			12.1 (5.33)	3.7 (2.92)	3.7 (3.38)	19.4 (9.72)		
Secondary Forest	19 (31.7)	0 (0)	2 (3.3)	15 (25.0)	2 (3.3)			10.8 (5.85)	2.3 (1.85)	3.2 (2.18)	16.3 (8.75)		
Fallow land	9 (15.0)	0 (0)	1 (1.7)	6 (10.0)	2 (3.3)			6.0 (3.35)	2.6 (2.96)	4.6 (1.24)	13.1 (7.08)		
Abandoned crop land	9 (15.0)	0 (0)	0 (0)	6 (10.0)	3 (5.00			11.1 (6.37)	3.6 (3.36)	6.2 (4.79)	20.9 (12.74)		
Benefit sharing arrangement						7.563 (6)	0.272					0.983 (2, 57)	0.380
Abunu	2 (3.3)	0 (0)	0 (0)	2 (3.3)	0 (0)			7.5 (6.36)	0.5 (0.71)	1.0 (1.41)	9.0 (8.49)		
Abusa	33 (55.0)	0 (0)	4 (6.7)	23 (38.3)	6 (10.0)			11.3 (5.73)	3.4 (2.74)	3.9 (2.88)	18.6 (9.49)		
Total claim	25 (41.7)	1 (1.7)	0 (0)	19 (31.7)	5 (8.3)			10.1 (5.65)	2.8 (2.71)	4.4 (3.56)	17.2 (6.36)		
Production location						11.362 (6)	0.078					**8.501 (2, 57)**	**0.001**
Asumura	20 (33.3)	1 (1.7)	2 (3.3)	15 (25.0)	2 (3.3)			13.0 (4.78)	3.8 (3.05)	3.1 (3.08)	19.9 (8.97)		a
Kasapin	20 (33.3)	0 (0)	2 (3.3)	11 (18.3)	7 (11.7)			13.0 (5.81)	3.7 (2.98)	5.3 (3.91)	22.0 (11.10)		a
Goaso	20 (33.3)	0 (0)	0 (0)	18 (30.0)	2 (3.3)			6.0 (2.96)	1.7 (1.27)	3.7 (1.95)	11.3 (4.57)		b

[a, b, c] LSD Post hoc test revealed significant differences across levels of variable.

Table 4: Demographic characteristics of the sampled certified farmers.

6.7. Tree species diversity in cocoa farms

A total of 1,062 trees (of different species) are found in the cocoa farms of the sampled (60) certified farmers. These trees are identified and categorised as desirable and undesirable species according to a standardised list proposed by Cocoa Health and Extension Division (CHED) of Ghana Cocoa Board to farmers (Appendix 4). Here, desirability of tree species is identified and defined in terms of their agronomic health support for cocoa farms/trees. However, as it will be shown below in the subsequent section from the perspectives and narratives of farmers that the definition of tree species desirability transcends beyond the institutionalised standardised list. Such alternative definition of tree species desirability by local smallholder farmers is deduced from their lived experiences, relations of production, and the current and historical political and economic context which influence(d) the maintenance and absence of shaded trees on farms.

Based on the standardised list of CHED, about 60% of the total trees found on farms are generally identified and considered as desirable while 17% are regarded as undesirable. Cocoa farmers and the state cocoa agronomic institution (CHED) do not know the desirability of about 23% of the total trees found. The most common desirable tree species found includes *Terminalia superba* (204), *Ficus vanifolia/exasperate* (134), *Khaya* spp. (128), *Pycnanthus angolensis* (73) and *Spathodia campanulate* (54). *Terminalia superba* mostly grow naturally and are nurtured by farmers if the sampling is properly identified by some farmers at an earlier stage of their development. Some farmers also deliberately plant them on cocoa farms and normally use poles and tags to identify them. This is also the same with *Khaya* spp. However, all the *Khaya* spp found were planted by the farmers. *Terminalia superba* and *Khaya spp* are distributed by the Forestry Commission through the farmer cooperative society. Some individual farmers directly access the seedlings of these trees from the Forestry Commission. Farmers mostly plant them in open spaces where there are fewer cocoa trees. But some farmers plant them on their cocoa farms when the cocoa trees are less than three years. Some farmers prefer to plant the trees along the edges of the cocoa farms (Figure 15). *Ficus vanifolia/exasperate*, *Pycnanthus angolensis* and *Spathodia campanulate* grow naturally and are maintained by the farmers. The planting and maintenance of the shaded trees are promoted by the certification programme.

Production areas	Desirable trees	Undesirable trees	Unknown	Total trees
Asumura	259	76	62	397
Kasapin	260	73	106	439
Goaso	119	33	74	226
Sum	**638**	**182**	**242**	**1062**

Table 5: Total number of shaded trees in the sampled cocoa farms and villages. **Note:** Production areas consist of the major towns and the surrounding villages where the study was conducted as shown in Figure 14.

The undesirable tree species that are most recorded on the cocoa farms of villages include *Rhodognaphalon brevicuspe* (67), *Ceiba pentandra* (61), *Cola gigantea* (38) and *Cola lateritia* (15). They are identified and considered as undesirable because they compete with cocoa trees for water and nutrients, retard the growth of cocoa trees and serve as host of pests such as mistletoes, stemborer, squirrels, cocoa pods borer, mirids/capsids, sucking insects (*Helopeltis spp*), sting bugs (*Pentatomidae*) which damage cocoa trees and pods. Undesirable trees are also known to produce unreasonable shade which prevents aeration and can result in black pods disease (*Phytophthora spp*), frosty pods rot (*Moniliophthora roreri*), and also prevent natural pollination of flowering cocoa trees. Trees such as *Cleistopholis patens* (83), *Ficus spp* (25), *Bombax buinopozense* (21), *Hannoa klaineana* (21), *Afzelia africana* (21) and others are not on the standardised list of CHED and hence their desirability is unknown.

Figure 15: Examples of trees species in cocoa farms promoted by the certification programme.At the left top, naturally occurring matured *Terminalia superba* trees. At the left below, *Terminalia superba* planted by some farmers in open space and at the edges of cocoa farms. On right, *Khaya* planted by some farmers in open space and at the edges of cocoa farms. Source: *Author*. Pictures were taken during fieldwork in 2018.

Farmers in the production region have average farm size of 7.8 acres (3.16 hectares)[26] with approximately 18 trees of different species on average per farm. This actually falls below the cocoa agroforestry standard where cocoa farms should have between 6 and 10 trees per acre (15 and 18 trees per hectare). However,

> "farmers are planting, and nurturing trees on farms and it is an indication that they are embracing the tree conservation on farms. But this does not mean that there are no challenges, and some of the challenges are based on what happened in the past. You may be wrong to make prompt judgement and accuse smallholders of the absence of trees on farms. Because some of the trees were cut down without the knowledge of the farmer. There are also some reasons that demotivate some farmers not to conserve trees on their cocoa farms.

[26] This estimation is based on my sample size of 60 farmers. Their farm sizes total 470 acres (190.202 hectares). This is compared to the total tree species found on farms to derive the average number of trees of different species on farms.

So the issues about trees on farms are very complicated" (Interview with an Agronomic Expert of the Farmer Cooperative Society, 2018).

The focus here is to unpack these complexities and outline forces and processes that had shaped (or are shaping) the maintenance and absence of shaded trees on cocoa farms. I explain below the various forces and processes.

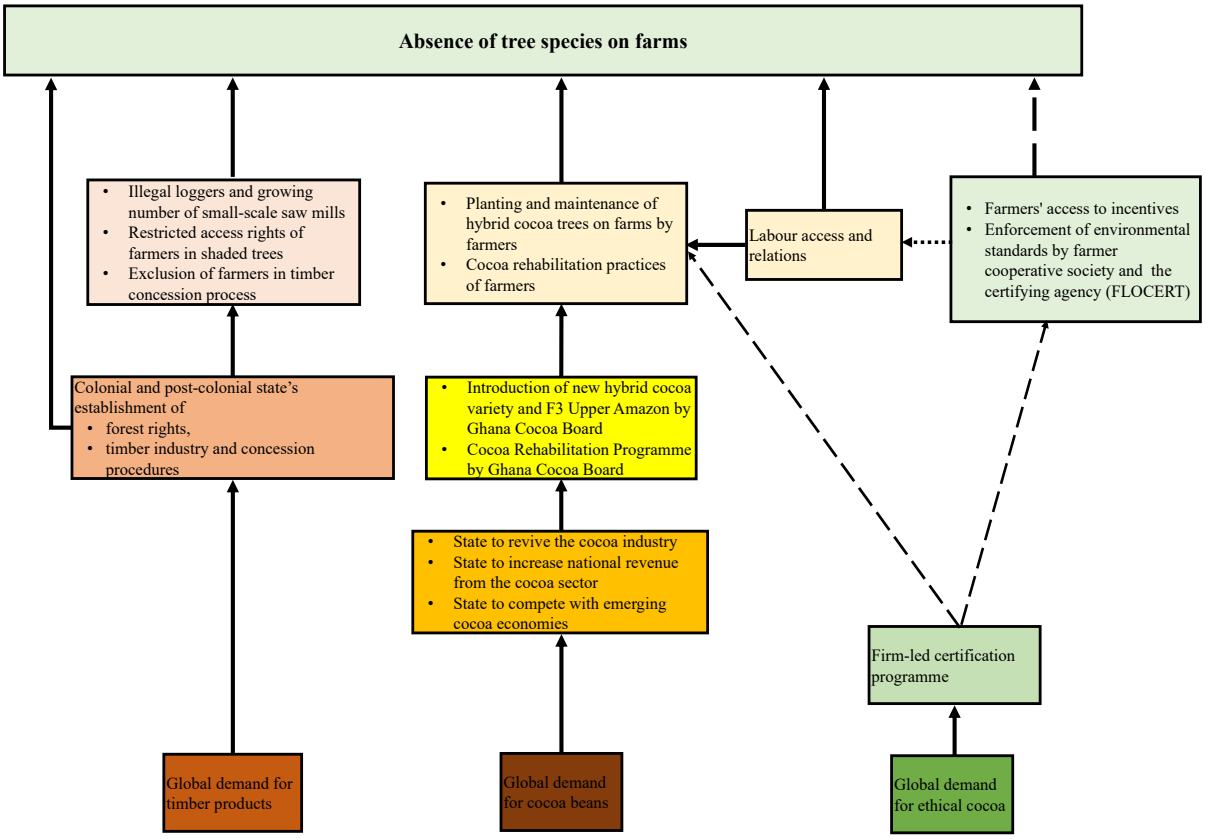


Figure 16: Chain and web of forces that influence the absence of shaded trees on cocoa farms

6.8. Drivers shaping tree conservation on farms

Crop variety of farms

One fundamental driver that shapes conservation of trees on farm is how farmers make decisions to balance cocoa tree crop productivity with the cost of production for a sufficient income returns. Crucial to their decision-making process that defines improvement in crop yields and minimisation of production cost is the crop variety on farms. The majority of farmers in the production communities or villages have hybrid cocoa trees on their farms. According to these farmers, the hybrid cocoa crop variety

increases yields compared with Amelonado when it is cultivated with no or fewer shaded trees. In the words of an experienced cocoa farmer in one village,

> "... that is what most people think. But the size of the farm does not matter at all. Rather higher crop yields are mostly obtained when you have the right trees at the right cocoa fields combined with proper farm management practices. If your farm fields are covered with a lot of Amelonado variety then you need more trees for the survival of your tree crop and for higher yields. But the hybrid and its benefits go with very few trees."

This confirms our observation in the various production communities that most farmers with hybrid cocoa varieties conserve few shaded trees on farms. According to one farmer, he affirmed that the farmers with hybrid cocoa variety who have a relatively higher number of shaded trees need to intensify the use of agrochemicals more regularly to prevent pests and diseases caused by shaded trees on farms in order to maintain crop yields. The cost of the pest and disease control are mostly incurred by the farmers. As a result, most farmers are less motivated to conserve shade trees on farms. However, the certification scheme requires the farmers to comply with the environmental standards in return for premium. But farmers claim that the canopy formed by matured hybrid cocoa tree variety does not support the growth of tree saplings they plant. This finding explains why most farmers plant trees in open spaces and along the edges of cocoa farms. As claimed by one farmer:

> "When you plant them in cocoa farms they do not survive. If overcrowded cocoa trees can prevent weeds on farms, how could they support these small tree seedlings? The agronomic experts and the forest officers know this that is why they even advise us to plant them in open spaces and at the edges of cocoa fields."

Young cocoa farms can accommodate relatively higher number of trees. However, most farms in the rural communities are matured. Hence, conserving the remnant tree species comes with cost at the expense of the farmers while planting new saplings occasionally do not survive.

Figure 17: An aged and abandoned cocoa farm undergoing rehabilitation. Most shade trees as well as moribund and diseased cocoa trees are cut down. Source: *Author*. Pictures were taken during fieldwork in 2018.

Continuous rehabilitation of cocoa fields

Another factor that limits the number of shaded trees on farms is the continuous rehabilitation of cocoa fields when the cocoa trees become aged or a farm has been unmanaged and abandoned. The rehabilitation of cocoa farms involves change of farm labour, frequent weeding, removal of shaded trees, elimination of moribund and diseased cocoa trees, and replanting of cocoa seeds/seedlings in abandoned crop fields in the matured farms and aged cocoa fields. Cocoa rehabilitation is considered as a good agricultural practice (GAP) by the certification programme, and farmers are highly encouraged to do so. The goals of rehabilitation are to revive the productivity of cocoa and reduce the input and labour costs of controlling pests and diseases. It is claimed that most of these pests and diseases are caused by shaded trees especially in hybrid cocoa farms. For rehabilitation, the mature trees are often cut down with chainsaws especially in the abandoned crop fields. Tree saplings are also affected in the process through weeding and land preparation. When cocoa fields are rehabilitated and replanted with hybrid cocoa seedlings, the better option is to maintain fewer shaded trees. A farmer claims that:

> "tree species such as Oyina (*Ceiba pentandra*) and Oyinakoben (*Rhodognaphalon brevicuspe*) grow faster and become bigger if you do not remove them early. I have about six of them in my farm, but I am scared of cutting them down because their sizes and crown can destroy most of my cocoa trees…. The crop variety is Tetteh Quarshie (referring to Amelonado). I inherited the farm from my father. He should have removed the trees earlier. But in case I want to rehabilitate the farm which I will do very soon then it makes more sense to remove them, but I will rather use a chain saw machine because the trees are very big. Some people adopt the traditional method of removing trees. You could either remove the bark of the tree in a circular ring form at the base or set fire at the base. With that the trees die off slowly. But the fire method is risky. You might end up destroying your farms and others with fires if care is not taken."

Some farmers plant and nurture tree saplings after the rehabilitation process. This is to enable the shaded trees to provide ecological and agronomic support for the rehabilitated and newly planted young cocoa seedlings. However, there are some farmers who deliberately plant shaded trees but may end up removing the naturally occurring trees. This is because in the words of a farmer,

> "trees are needed on farms mostly at the initial stage of planting and caring for the cocoa seedlings. That time it does not matter whether the trees are bad or not. But as the cocoa trees grow, you have to gradually remove any shaded tree especially when you observe that they are competing with your cocoa tree…. Yes, you have to do that, it is the cocoa that will feed you and your family not the trees".

Labour relations and access in cocoa fields and shade trees

Also, the mode of access in crop fields influence tree species conservation. Farms that are managed on labour contract basis either with caretakers or sharecroppers tend to have relatively more shaded trees than other mode of access such as inheritance and outright purchase (new farm owners) (Table 3). This is because the land use decision to rehabilitate cocoa fields are often taken by farm owners and landlords rather than the caretakers and sharecroppers who manage the farms regularly. But the new farm owners who inherit or purchase cocoa fields are mostly keen on rehabilitating their cocoa farms to boost productivity.

However, there are exceptions. Some caretakers who manage cocoa farms for absentee farmers are less motivated to plant the common trees such as *Terminalia superba* and *Khaya spp*. This is because these caretakers do not have any clear access rights in those trees if they plant them. In the words of a caretaker, he narrated that

> "when you plant and nurture these trees, it does not belong to you and you will not get any benefit. You are rather planting and protecting them for the farm owner and his family. We are advised by the cooperative officers that we should plant these trees. They always say they are negotiating with the Forestry Commission and educating the farm owners so that we could claim rights in these trees when they mature. But the trees could take about 30 years before they become matured. At that time, we might not be around to even claim some benefits. I could be sacked, or I may decide to find another job. So, to me I do not think it makes sense. I do remember that my farm owner brought some tree seedlings from Goaso and asked me to plant them. I did not. I left them at the resting place. He came back to see them there, and he was very angry. But he did not know that even if I had planted them, I would have decided whether it would survive or not."

The certification programme encourages farmers to plant trees with the promise of securing ownership rights for farmers in the shaded trees they plant on farms. It involves counting, recording and registering the trees in the name of the planter with the Forestry Commission. The tree tenureship rights assurance by the certification programme is based on the Timber Resources Management Act 1998 (Act 547) as amended by Act 617, section 4. The Act among other issues stipulates that "any timber tree planted and registered with the Forestry Commission in off-reserve areas belong to the planter who is entitled to 100 percent of the benefits" (See Appendix No.3: Extracted from a poster in a village, 2018). However, most caretakers are less motivated to plant the economic shaded trees because they believe that it is impossible for the certification programme to secure for them the ownership rights in the planted trees on lands owned by someone else. It is also not possible because the economic shaded trees have long-term timber benefits due to their prolonged maturity period.

Illegal loggers, small-scale sawmills and farmers' exclusion in timber concession process

Moreover, the activities of illegal loggers and the growing number of small-scale sawmills influence farmers' decisions to conserve shaded trees on farms. Most of the trees which farmers are encouraged to conserve are economic shade trees. These trees are mostly exploited by illegal loggers and the sawmills in the region. They do not only steal them but destroy cocoa trees and degrade the soil in the process. During the fieldwork exercise, I came around many trucks loaded with beams. I also observed many trucks and beams confiscated by the Forestry Commission and the State Military task

force. These trucks and beams were at the backyard of the Forestry Commission. An official of the Commission confirmed that the beams were from the reserved and off-reserve areas. Also, in most villages that I visited, noises of chain saws were often heard either in the late evening or at night. The illegal loggers had realised that the smallholder farms had formed a gang to resist their operation, so they changed their time of operation.

Abugre & Kazaare (2011) for instance reported about the occurrence of illegal logging in Asunafo-North area. They found that most of the illegality took place in off-reserve areas with *Trplochiton scleroxylon* (Wawa), *Milicia excelsa* (Odum), *Terminalia superba* (Oframo), *Khaya spp* (Mahogany) being the most exploited because of their economic value. Similarly, I found that some of those trees such as *Trplochiton scleroxylon*, *Milicia excelsa* and other economic shaded trees are rare species in the area as a farmer bluntly said, "they have exploited all the trees here." Another farmer in one village claims that "because of the damage they cause to our cocoa farms, previously, it made a lot of sense to destroy any valuable economic tree sapling on our farms before they could even mature to be exploited by these operators".

Furthermore, farmers have less incentives to conserve shaded trees because they do not participate in the timber concession process and hence do not get any benefit from these concessions. Currently, some farmers' motivation to plant and nurture trees is because they are being educated on the supposedly amended new forest laws (Appendix 3). The new laws indicate the right of farmers to be notified on the timber concession in their cocoa fields. Farmers also have the right to be involved in the inspection process and to request for the exclusion of their cocoa fields from the timber concession area. The cooperative society workers educate farmers and promise to defend these rights. However, in an interview with an officer at the Forestry Commission, he claims that the state still has absolute control and rights over all trees whether planted or not, and that they are yet to implement the amended law. Common claims among farmers are that on-farm logging concessions are still being granted by the Forestry Commission without farmers' knowledge. But the Forestry Commission said they always follow the due process with regard to concessions.

6.9. The underlying political and economic forces

The immediate contextual drivers such as the existence and planting of hybrid cocoa, access rights in trees and labour relations, illegal logging and proliferation of small-scale sawmill, timber concessions policies of the Forestry Commission that shape conservation of shaded trees on cocoa farms are driven in part by broader political and economic forces. These drivers are also embedded in history. The drivers whether current or historical are associated with the state and the operation of the market. The political and economic forces influencing the maintenance of trees on farms are explained below.

The early pioneer farmers in Ghana practised cocoa agroforestry by intercropping cocoa crop with shade trees and other food crops such as yam, plantain, banana, cocoyam, local spices and fruits) (Interview with Local Chief Farmer, 2018; Myers, 2019). Farmers did not deliberately plant trees but maintained some matured trees and nurtured saplings on their farms to support the growth of their cocoa plants (1nterview with Cocoa Board Officials). In the earlier days of cocoa boom around the 1930s, about 90 percent of farmers planted the Amelonado cocoa type popularly known as Tetteh Quarshie (Edwin & Masters, 2005) which favoured the agroforestry farming practices of farmers because it survived and grew better with shaded trees on farm fields (Gockowski et al., 2010; Gockowski & Sonwa, 2007). The remaining 10 percent were of Trinitario variety (Edwin & Masters, 2005). However, in the early 1970s a research and experiment by Cocoa Research Institute of Ghana (CRIG), a subsidiary of Ghana Cocoa Board, revealed that the planting of the high-yielding new varieties such as the F3 Upper Amazon and hybrid cocoa variety with less or no shade trees along with fertiliser application could double cocoa yield. This agronomic revelation and subsequent promotion by CRIG culminated in the massive adoption of cocoa monoculture or full-sun cocoa farming by smallholder farmers in Ghana (Gockowski & Sonwa, 2007).

Variety no.	Variety Name	Parent	Source	Extension period	Years to bearing †
			'Traditional' varieties		
1	Amelonado	Amelonado	Equatorial Guinea	Before 1887	6–8
2	Trinitario	Trinitario	Trinidad, Jamaica, and Venezuela	1900–1909	6–8
3	Mixed Amazon	Mixed Amazon	Peru via Trinidad	1950s	5–6
4	Originally Series II Hybrids	Upper Amazon × Amelonado and Local Trinitario	Peru and WACRI	1966–1970	4–6
5	Modified Series II Hybrids	Upper Amazon × Amelonado Hybrids	WACRI	1971–1985	2–3
			'New' varieties		
6	BRT collection	Inter-Amazon	British Research Team	Mid-1980s	2–3
7	Mutant hybrids (MV5)	Irradiation techniques	Current CRIG collections	1990s	4

Table 6: Stages of cocoa varietal development programmes in Ghana.

Source: Edwin & Masters (2005).

The introduction of the new hybrid cocoa variety by CRIG was driven by decreasing cocoa crop yields as a result of the ageing tree stock of the old varieties especially the Amelonado (Table 6), which was also susceptible to pests and disease infestation (Padi et al., 2017a; Padi et al., 2017b). According to Amanor (2005), many farmers even concentrated on the cultivation of food crops rather than cocoa crop because of the high risk and cost of producing cocoa at that time. Ghana's cocoa sector also lost much of its cheap labour from Burkina Faso and Mali to the neighbouring Cote d'Ivoire. This is because these migrant labourers were less motivated to work in these precarious aged and disease-ridden cocoa farms than in Cote d'Ivoire where the state's policies facilitated the migrants' access to land at favourable terms (Kolavalli & Vigneri, 2011). Subsequent outbreak of nationwide fire in 1983 complicated the farmers' motivation to plant cocoa trees (Interview with an Expert of CHED, 2019). In order to revive the entire cocoa industry in Ghana, increase national revenue and compete with new producers such as Cote d'Ivoire, Indonesia, Malaysia and Brazil, several economic reforms were put in place between the 1970s and 1980s. The introduction of the hybrid cocoa variety was one of the most prominent interventions (Abdulai & Rieder, 1995; Edwin & Masters,

2005; Kolavalli & Vigneri, 2011) and one which undermined the maintenance of shaded trees on farms.

Since its introduction, most of the hybrid cocoa variety are distributed through the state formal channels by Seed Production Division (SPD) and Cocoa Health and Extension Division (CHED) of Ghana Cocoa Board. Informal channels which includes farmer saved seeds, seed exchanges among farmers and local seed market also facilitate the distribution of the hybrid variety (Asare, 2010; Asare et al., 2016). As a result, the traditional varieties are disappearing from most cocoa fields in Ghana (Edwin & Masters, 2005). For example, Vigneri (2005) indicates that over 50 percent of farmers in three main producing areas such as Ashanti, Brong-Ahafo and Western region had planted the hybrid cocoa variety by 2002. In Asunafo-North cocoa-growing communities, what is complementing these existing formal and informal channels of hybrid seed distribution is the various hybrid seedlings nursery programme by the Farmer cooperative society. The seedlings are distributed to farmers on annual basis. The adoption of the hybrid cocoa variety is also because it is claimed to be more resistant to pests and diseases. It also bears fruits within a short period after planting (2-4 years) than the old varieties (Edwin & Masters, 2005; Asare et al., 2016).

Linked to the introduction and promotion of hybrid cocoa varieties is the Cocoa Rehabilitation Project introduced by the state as a special programme as part of the Economic Recovery Programme under the supervision of the World Bank and International Monetary Fund. The project was aimed to revive and expand the cocoa production sector of Ghana between 1983 and 2008 (Kolavalli & Vigneri, 2011). This project was also driven by a sharp fall in cocoa output from 400,000 tonnes to about 180,000 tonnes in the 1970s. In addition to the spread of disease, pest and ageing cocoa trees, this decline was attributed to the

> "fall in producer prices which acted as a disincentive to cocoa farmers, persistent weakness in the internal market, unfavourable government control measures over cocoa purchasing and exports, high marketing and administrative costs and export duties" (Kwaw-Nimeson & Tian, 2019, p. 208).

Under the Cocoa Rehabilitation Project, farmers were encouraged and compensated for cutting down disease-infested cocoa trees and replacing them with disease-resistant hybrid cocoa varieties (Edwin & Masters, 2005). Additionally, the state intensified the

delivery of agronomic technical advice and input for those who rehabilitated and replanted their farm fields with the hybrid cocoa variety (Kolavalli & Vigneri, 2011). Cocoa rehabilitation has continued to be an important state-driven sustainable land use activity for many years now. It has been also adopted by many private sector certification programmes (Interview with Agronomic Expert of CHED, 2020). Recently, the state via Ghana Cocoa Board has secured $230 million for a nationwide rehabilitation programme. This is subsequently accompanied with the supply of 92 million hybrid cocoa seedlings for the 2020/2021 crop season (thecocoapost.com, 2020, 2021). This will continue to influence conservation practises of smallholder farmers.

Connected with access rights in trees/tree tenure, illegal logging and proliferation of small-scale sawmill, timber concessions policies of the Forestry Commission are colonial and post-colonial appropriation of forestland, timber industry and the state's reluctance to share forest rights with farmers. These drivers started with the colonial idea to introduce and implement similar scientific forestry from India in 1865 and 1878 and Southern Nigeria in 1902 to colonial Ghana, Gold Coast (Hansen & Lund, 2017).

During the period of colonialism, the British colonial government initially seized control of all forestlands (occupied and unoccupied) and vested them in the Crown. Their intention was to grant tittles to British and European investors to undertake plantation, agriculture, forestry and mining activities. In order to curtail indiscriminate land concessions at that time, a Crown Land Bill was proposed in 1894 to formally and legally establish forest and land rights to the Crown (Wardell, 2006; Hansen & Lund, 2017). While this was initially rejected by native pressure group Aborigines' Right Protection Society, a Concession Ordinance was agreed on 1900. This allowed chiefs to take control of forestlands but limited their size of concessions (Wardell, 2006).

Colonial government concerns over increasing cocoa deforestation resulted in the development of the Timber Protection Ordinance in 1897 and 1907 to protect tree species such as Mahogany (*Khaya spp.)* and Cedar (*Entandrophragma spp*) (Hansen & Lund, 2017). As a result of lack of enforcement, this was not very effective (Parren &

De Graaf, 2005). Following Thompson's report, [27] a Forestry Department was established to create and protect forest estates and to facilitate the supply of timber. With this, chiefs remained owners of forestland, forest were to be managed by local bylaws and the Forestry Department was to offer technical advisory services (Austin, 1997).

With rapid pace of cocoa expansion in the forest areas, the colonial government proposed a bill in 1926 and passed the Forest Ordinance in 1927. This eventually gave the power to the colonial government to reserve forest in an event where the chiefs were reluctant to do so (Hawthorne & Abu-Juam, 1995). The main objectives were to stop expansion of cocoa farming, to produce sufficient moist for cocoa crops via the creation of adjacent forest reserves, to halt the savannah zone from advancing to the forest belt, create reserves in hilly areas to protect water resources and prevent erosion and to facilitate the timber industry (Hall & Swaine, 1981). This new Forest Ordinance in 1927 reserved access rights in trees both in the reserve and off-serve areas to the colonial government. Felling of trees were banned but timber concession and felling agreement were promoted by the colonial government (Logan, 1947). Chiefs were involved in the concession negotiation process but in return some very limited benefits were allocated to the Stools (represented by the chiefs) (Logan 1947 and Amanor 1996).

In the 1940s after the World War II, when most European countries were under construction, the demand for timber and its export rose rapidly, and many timber industries were established in Ghana. The Asunafo region was ushered into a timber and logging industry within the same period in the 1940s. Notable timber companies were Mim timber company and Gliksten West Africa Limited. Highly demanded and exploited trees were tropical hardwood tree species such as Mahogany (*Khaya* spp.), Wawa (*Triplochiton scleroxylon*), Sapele/Utile (*Entandrophragma cylindricum, E. utile*) and Emeri (*Terminalia ivorensis*). Most of the timber (about 90 percent) were harvested in off-reserve areas (Foggie & Piasecki, 1962). Thus, the exploitation of shaded trees on farms by timer companies has existed since time immemorial. For example, there was a court case between Gliksten West Africa Limited and Appiah, a

[27] Mr H.N. Thompson was a Conservator of forests of Southern Nigeria who toured the forest of Ghana, then Gold Coast for six months mostly by foot to produce a forest report (Hansen & Lund, 2017)

cocoa farmer in 1967 over the damages the company caused to the farm of the farmer in 1959 by felling trees, constructing roads and passes for caterpillars to cart the timber. The court ruled in favour of the farmer for compensation against the concessionaire [Gliksten (West Africa) Ltd. V. Appiah (1967) JELR 69076 (CA)].

After independence, the new government also consolidated the power of the state, and the chiefs' concession negotiation power was abrogated. The new Concession Act further vested all timber and forest in the President in trust for the stools. A new institutionalised benefit-sharing arrangement was established. The Forestry Department collected timber revenues and after deduction of management cost, transferred the remainder to the Administrator of Stool Lands to be distributed to the Traditional Councils and District Assemblies. Many domestic timber firms were encouraged as an attempt by the independent state to curtail the dominance of foreign timber firms. The state's rights in trees and timber benefit-sharing arrangement[28] still persists and many small-scale sawmills have proliferated in the area. According to an expert at the Forestry Commission,

> "…just as there are many illegal miners in the mining sector, the timber industry is also not devoid of illegal loggers and sawmills. We are definitely trying our best to stop the situation. We mostly lack the sophisticated monitory equipment like the drones and satellites. It could have been better. I hope you saw some soldiers around. Currently, what we are doing now is to involve the military to at least curb the situation but there are certainly some difficulties."

A sub-chief in a village attributed that the operations of the illegal chain saw operators became very rampant when the area was designated and started to operate as a timber-producing region.

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[28] According to the Concession Act 1962 (Act 126, section 16) and the 1992 constitution, article 257 all rights of trees (especially the naturally occurring trees) are vested in the President in trust for and on behalf of the stool regardless of their on-or off-reserve status. Currently, 1992 constitution of Ghana, article 267 provides a formula on benefit sharing: The Administrator of Stool Lands deducts 10%, the remaining is shared with 55% to the District Assembly, 25% to the Stool and 20% to the Traditional Council. The Forestry Department (now Forestry Commission) withholds 50% of the gross revenues from forest reserves and 40% from outside reserves for its services. The remaining revenues are transferred to the Administrator of Stool Lands (Training Manual Booklet on forest laws for farmers, 2015; Hansen and Lund, 2017).

While farmers often complain about not being able to participate in or receive compensation for timber concession[29], the Forestry Commission strongly claimed that they

> "follow the due process and even when the communities do not get their share of the timber concession, we are not responsible for the distribution of the benefits. We only transfer the revenue to the appropriate institution to be disbursed."

The Economic Plant Protection Act (AFRCD 47 1979) prevents felling of trees on cocoa farms unless the farmer consent to it and the Timber Resource Management Act (Act 547,1998 amended as Act 617,2002) prohibits the granting of timber rights on private forest plantations and land with trees grown and owned by private persons. However, the Forestry Commission still claims rights over trees in all reserve areas. In a conversation with an officer of the Forestry Commission, he argued that

> "farmers are planting trees and most trees also grow naturally. So, how do you differentiate and identify the ones that belong to the farmer and the state? It is really difficult. That was why I was telling you that the Commission still manages trees in reserve and off-reserve areas on behalf of the state."

The timber industry particularly Ayum timber company was shut down in 2016 due to financial and operational challenges[30] [31]. However, it did not mean the end of logging activities. In fact, a lot of private sawmill firms have emerged in the area (Personal Observation and interview with Officers of the Forestry Commission, 2018). Currently, the government is in the process of reviving the timber companies i.e., Ayum timber company. In the year 2020, the government committed over $1 million to resuscitate the company under its flagship economic programme, One District One Factory (1D1F). This initiative by the state will have substantial influence on maintenance of shaded trees on farms based on the previous experience.

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[29] The Economic Plant Protection Act states that felling rights with respect to timber shall not be granted where the timber trees stand in farms where specified plants (cocoa) are cultivated. If timber is felled the farmer should be compensated for his/her losses at a rate determined by the Minister (AFRCD 47 1979). If

[30] https://www.ghanaiantimes.com.gh/mim-timber-factory-gets-gh%C2%A26-5m-1d1f-bailout
[31] https://www.myjoyonline.com/govt-to-revive-ayum-timber-company/

6.10. Conclusion

The aim of this paper is to investigate the forces that influence the conservation of shade trees on certified cocoa farms. Based on a sampled certified cocoa field, my findings showed that the number of shade trees on farms fell below the agroforestry standard.

One driving factor was the hybrid crop variety in most cocoa farms in Asunafo-North. I showed that hybrid cocoa crop production increase with initial amount of shade trees. However, while the certification programme supported and promoted the distribution of hybrid cocoa seedlings, farmers preferred fewer trees in order to increase crop yields from their farms and reduce attacks of pests and diseases which have higher labour and farm management cost. Also, most trees could not survive under the canopy of matured hybrid cocoa farms. The hybrid cocoa variety has replaced (or is replacing) the old variety which is the Amelonado because of its early maturity period. It was introduced by the state to revive the cocoa sector, compete with emerging cocoa economies, increase crop yields and obtain revenue. This was possible because there was (or is) global demand for cocoa beans.

Linked to the hybrid cocoa variety was rehabilitation of cocoa fields. The rehabilitation required the removal of not only moribund and diseased cocoa trees but also some shaded trees. It was aimed to revive the productivity of cocoa crops on farms and maintain their resilience to drought, pests and diseases. It was required for smallholders to plant the hybrid cocoa variety, hence conservation of fewer shaded tree species. The Cocoa Rehabilitation Programme was introduced and promoted by the state to sustain the cocoa sector as part of the Economic Recovery Programme supported by the World Bank and IMF. It still remains a major state's sustainability programme and it is being promoted and considered as GAP by the certification programme.

Also, the mode of farm access and labour relations were found to be significant drivers of conservation of shaded trees on farms. Farmers who gained access to cocoa fields through outright purchase and inheritance were more motivated to revive and maintain the agronomic health of farms through rehabilitation process which influenced the maintenance of shaded trees on farms. However, some labourers were more cautious of removing trees on farms to avoid confrontation or being sacked by farm owners. But, as a result of lack of access rights in trees, caretakers were less motivated to plant trees on

farms. There was also a struggle for access rights in trees between the smallholder farmers and the Forestry Commission. The certification programme has not been able to live up to their promise to secure tree rights for both caretakers and farm owners. This is because the state through the Forestry Commission is still hesitant to transfer their long-held power (i.e., the ownership rights in economic shaded trees) to the smallholders despite the newly amended forest law. Farmers are less involved in the concession process even though the forest law requires them to involve farmers. The denial of forest rights under the agroforestry initiatives by the certification programme has sparked a new power struggle between the state and the farmers. The only way the farmers can win the battle is to plant few trees.

Furthermore, trees on farms were mostly removed by illegal chain saw operators. Their activities and the damages they caused to crops on farms do not motivate farmers to conserve trees. Whiles farmers formed gangs to protect their cocoa field, the illegal logging operators have changed their mode of operations. The illegal logging activities started in cocoa fields when the colonial government ushered the region into a timber industry. Post-colonial government continued to sustain the industry. This was possible because colonial government appropriated forest rights which continued after independence. As the timber industry developed, illegal logging increased in many off-reserve areas and private sector small-scale sawmills proliferated. The absence of most economic shaded trees in cocoa fields is because of the timber industry and the externalities. Currently, the initiative by the state to revive the defunct timber industry in Asunafo-North will complicate the conservation practises of shaded trees in the Asunafo-North.

The evidence showed that the drivers that shaped conservation of trees on farms were more rooted in history. They were constructed by historical political and economic forces of the state and the market. The certification scheme cannot compete with the interest of the state or the timber industry. It is also less capable to address illegal logging without the support of the state. The programme is yet to practically secure forest rights for the certified farmers. However, it was discovered that drivers such as distribution and planting of hybrid cocoa seedlings and cocoa rehabilitation associated with the state's sustainability programme are supported and promoted by the certification programme. This occurs because the certification programme prioritises

economic sustainability more than environmental sustainability. In order to find the perfect balance between components of sustainability (i.e., social, economic and environmental), compromises, efforts and dialogue will be required of the state, the private sector firms and the smallholders.

6.11. Postscript

The previous analytical chapters (3,4,5) of this thesis focus more on the social dimension of the certification programme in Asunafo-North. This chapter showed the ecological prospects of the certification programme within political economy. The aim was to understand the potentials of certification schemes in promoting cocoa agroforestry in Ghana. In this paper, I showed the complex interlinked forces that influenced the conservation potentials of certification scheme. I demonstrated how state and market power influenced the maintenance of trees on farms. Specifically, there was a competing interest among actors and sectors, and the state played a prominent role. It was the state that made these economic or industrial decisions and policies. These decisions and policies were in competition with each other. For example, the promotion of cocoa rehabilitation and planting of hybrid cocoa variety—which were also encouraged by the certification scheme—were competing with conservation of economic shaded trees. At the same time the state was not ready to transfer forest power to the smallholders despite constitutional reforms, and the certification programme is yet to successfully secure the forest power from the state to the certified farmers. This chapter provided an insight on the ongoing power struggles between the state, chocolate firms and smallholders over the ecological transformation in the cocoa production landscape. In the next chapter, I provide the conclusions of the thesis by recapping its social and ecological aspects, and how they are linked to the exercise of power.

Chapter Seven: Summary and Conclusion

7.0. The purpose and findings of the thesis: Reflections

This thesis aimed to understand how the state, private sector firms and smallholder power relations produce social and ecological changes in rural cocoa-producing landscape of Asunafo-North in Ghana. The purpose was based on the recent growth in certification schemes and sustainability initiatives in Ghana as a result of the increasing consumer demand for ethical cocoa. Ethical cocoa suggests that cocoa sourced from smallholders must be free from deforestation and child labour. It also means smallholders who produce the cocoa should be relieved of poverty and other deplorable social conditions. Smallholders should, moreover, have the required technical tools and ideas that could protect the environment and improve their crop productivity for better household income. Ghana's cocoa production provided a typical example with regards to those ethical issues and therefore, needed to be addressed. This is because Ghana and Cote d'Ivoire produce over 60% of global cocoa beans. These motivated the private sector to manage sustainability and ethical issues in an already state-controlled sector through their certification programmes. I focused on the interactions between the state, the chocolate firms and smallholders to understand the social and ecological change that is produced or reinforced under the certification programme in the local cocoa farming communities. The extent of the social and ecological performance by the certification scheme through the relational influences were driven by four research questions which include: (1) How does a private sector firm govern or embed in rural cocoa communities with its certification scheme to influence local agrarian context? (2) What benefits (and burdens) do farmers obtain from the certification scheme and why? (3) To what extent does the scheme consider local social relations of cocoa farming in the rural communities, and what is its effect on farmers' livelihood security? and (4) How does a certification scheme affect farmers' agro-environmental decisions to transition from cocoa monoculture to cocoa agroforestry?

The two fundamental elements that permeated the purpose of the study and linked the research question together were "power relations and socio-ecological outcomes". Hence, I adopted political ecology as the theoretical approach. Using the case study

approach, the research questions were studied as sub-cases or embedded cases. The analysis and argument for the research were guided by four conceptual or analytical framework: governance, the notion of access, social relation of production and chain of explanation. The analysis and arguments with respect to the research questions were produced as thesis chapters.

The first analytical chapter (chapter 3) focused on the governance of firm-led certification scheme and its operational effects on local agrarian institutional forms such as chieftaincy roles, custom, traditions, production and labour practises. I found that firm's certification programme via territorial cooperative, standards and regulatory mechanisms influenced the institutional power relation between the state and smallholder farmers. This was because the certification programme secured institutional power for the certified smallholders or the cooperative society to operate and regulate their own production practises. Rather than depending on the state, the certified smallholder farmers had their own agronomic experts, storerooms, model farms, nursery programme, education and training programmes. They also had their own premium package and decided on how and what it should be used for. I further argued that the certification programme changed the institutional power relations between the state and smallholders because the state cooperated so that it could also benefit from the scheme. Once the institutional power was secured, the lead firm then influenced the production and labour practices of smallholders so that they could produce ethical cocoa for the lead firm. The chiefs and the village elders were used to mobilise farmers and secure institutional power for the cooperative society, but the cooperative society has also disrupted the role of the chiefs and village elders such as settlement of social disputes. However, chiefs still maintain their adjudication powers over land disputes.

The second analytical chapter (chapter 4) built on chapter 3. Once a firm could govern rural cocoa-producing communities with its certification programme to influence their production and labour practises, the next logical question was: what benefit does the certified smallholder farmers derive from the certification scheme, and how? In this chapter, the thesis analysed how certification incentives serve as access mechanisms for the distribution of benefits and also burdens. I found the certification scheme increased crop yields, increased household income, improved the control of pests and disease,

improved crop resistance to changing weather, promoted collective power and social interaction, and provided the communities with social amenities and services. The scheme produced incentives for farmers' benefits which filled the responsibility gap left by the state. However, the certification scheme produced altered and uneven distribution of benefits, generated production and bureaucratic costs, market leakages, environmental theft, unjust gendered labour relations and enhanced labour workloads and exploitation. I also showed how the certification incentives were structured by the power relations between the state and the firm. I argued that while the firm pursued certification programme for market benefits, the state often operated to regulate the activities of the firm to protect the cocoa sector to avoid risks.

The next analysis in chapter 5 focused on farmers' access status and how it changes. It built on chapters 3 and 4 because it documented on some peasant attributes that still persisted under cocoa certification scheme and highlighted the burdens that confronted certified farmers. I found that some farmers lost their ownership rights in cocoa fields because of off-season poverty and inadequate bonuses they received as premium. Also, the labour rights of caretakers are exploited. These changing status of smallholder farmers occurred through processes of relations such as outright sales of cocoa farms, labour contractualisations in sharecropping system and collateralisation of cocoa farms. I found and argued the dispossession of access rights in cocoa fields produced winners and losers.

The last analytical chapter (chapter 6) examined the conservation practises of certified smallholder farmers in the rural communities. I wanted to understand the forces that drove conservation of shaded tree species on cocoa farms. This was to produce an insight regarding the potentials of the certification scheme in promoting cocoa agroforestry in rural cocoa-producing communities. I showed that farmers' conservation practises in cocoa farms were shaped by diverse local contextual factors, such as hybrid cocoa tree variety, continuous rehabilitation of cocoa farms, access rights in trees and labour relations, illegal logging, proliferation of small-scale sawmill and timber concessions policies of the Forestry Commission. These driving local forces were as a result of certain historical and ongoing political and economic forces. I argued that the capacities of certification scheme to promote cocoa agroforestry should understand

and consider the contextual drivers of change and how they are rooted in history, political and economic power.

7.1. Theoretical contribution

Most studies on certification programmes are often impact studies that are quantitative oriented and often with little focus on application of concepts or theories. This thesis brought a new alternative way through the qualitative approach to understand the connections between certification schemes and the local contexts both empirically and theoretically. The thesis provided a theoretical medium through the concept of governance, the notion of access, the concept of social relation of production and chain of explanation to understand power and its relational effects in a more practical manner.

I provided an understanding that as a result of the skewed power relation between the state and smallholders, a chocolate firm was able to govern or operate to secure power for itself, and in doing so got more for smallholders thereby reshaping the power relations in the cocoa sector. The firm also exercised its powers through structured mechanisms and processes to influence the production and labour practises of smallholders. The firm again exercised its powers through resources (i.e., incentives). These powers were exercised to produce certain intended effects or outcomes. For example, through the firm's power, smallholders were able to obtain a range of benefits. The firm also exercised its powers to gain legitimacy to operate and obtain market benefits. In most cases, the state either cooperated or regulated the activities of the firm to protect the cocoa sector and maintain its benefits. However, in areas where the state and firms' power were absent, unjust local conditions continued to persist. I also practically showed that the ability of a firm to influence the conservation of tree species on farms is dependent on the power of the state and some market forces that were often historical constructs. I demonstrated that the influence of a firm's power via certification scheme depends on the local contextual factor and conditions of the smallholders, and also effectiveness of state power in the local context. Therefore, power in Asunafo-North's cocoa sector could be understood as operating from the state, the market and also the smallholder farmers.

7.2. Policy recommendations

This thesis demonstrated that market intervention programmes like the certification scheme can facilitate sustainability transition in cocoa production systems. But it is not without challenges. The findings and arguments produced in this thesis imply that firms, the state and the smallholders are crucial agents of change for sustainability in the cocoa sector. It is in this view that I wish to make some recommendations. The recommendations include continuation of some aspects of the certification that bring about positive and sustainable change and amendment of the programme elements that hinder sustainable transformation at the cocoa supply chain.

To begin with, the governance of the supply chain in Asunafo-North through the certification programme facilitates local community mobilisation and establishment of new organisation with system of rules, democratic principles and leadership, standards and values. This accords smallholder farmers with some level of self-government or productive independence from state power and reliance (political change). As a result, smallholders are able to decide and implement their own community development agenda and projects. Firms must sustain this aspect of certification programme since it is empowering smallholders and facilitating their participation in rural development. Also, firms should focus and intensify the incentivisation mechanisms that enable smallholder farmers derived multiple benefits. However, firms should promote solutions and mechanisms that are more inclusive and take into account all participants at the supply chain such as farm-owners, caretakers, sharecroppers and women. To ensure that smallholders derive comprehensive benefits from the certification incentives especially with regards to the distribution of the premium, firms should shoulder most of the administrative, bureaucratic and production cost of certification. Again, firms should collaborate with researchers, scientists and agronomists to introduce innovative solutions that do not produce conflicting outcomes. This is particularly with the case of cocoa rehabilitation at the supply chain which later present itself as an anti-forest conservation programme. It is therefore incumbent upon firms to re-design and scale up certification programmes to sustain the positive changes so that they could also maintain their market legitimacy and showcase their ethical commitments.

Moreover, the state can do better. It must play an active role as an important participant. This is especially the case with the forest conservation aspect of the certification programme. The state should therefore relinquish their forest powers on privately held farms and completely grant smallholders ownership rights in forest trees on those farms. Both the state and firms should make efforts to forge more coherent and non-contradictory advice regarding cocoa cultivars and on-farm trees (promoting hybrid and shade trees and promoting conservation of economic shaded trees and securing forest rights for farmers at the same time). As a beneficiary of the certification programme, the state should strengthen its institutions especially with respect to CHED, SPD and Forestry Commission, so that smallholders could adequately rely on their services. This is really important not only during the operations of the certification but after the certification as well. Indeed, the excessive reliance of the state and the smallholders on the private sector for the provision of incentives and benefits can be somehow unsustainable and problematic as most firms' certification programmes have timelines. What happens after the completion of firms' certification projects? What should the state do to maintain or enhance economic benefits after the certification schemes? What will smallholders do without the certification programmes? Will the state take over from the firms and provide these incentives? Will smallholders still maintain such institutional organisation and power? What does this mean for firms and consumers? Will smallholders still produce ethical cocoa for firms and consumers after the scheme? Which body or regulatory mechanism will be instituted to monitor and regulate the production and labour practices of smallholders? These are some numerous post-certification questions that must be looked at for future policy and programme designs in the cocoa sector.

7.3. Future research

On the basis of the findings and arguments of the thesis, I propose areas in the certification economy that need future research. Firstly, future studies should focus on multiple cases involving multiple regions and different certification or sustainability programmes (such as state-led, firm-led, NGO-led, etc.) in the cocoa sector across the country while using non-certified farmers as the controlled study. This could also be done by comparing different countries like Ghana, Cote d'Ivoire, Nigeria, Cameroon, Madagascar, Indonesia, Brazil, etc. in the form of cross-country study or cross-regional

study and analysis (i.e., the comparison between certification programmes in the North American cocoa sector and West Africa). In order to derive knowledge from similar certification programmes in other commodity landscape (like coffee, vanilla, soy, oil palm, tea, etc.,) future research can do comparative studies on certification programmes between cocoa and other commodities. Secondly, future research could look at how different certification programmes and sustainability initiatives contribute to Sustainable Development Goals (SDGs) across localities, nations and regions. This will enable us to understand how certification programmes can serve as means through which stakeholders in the chocolate industry contribute to the achievement of these global goals and agenda. Also, there is the need to still research and highlight those injustices (social, economic, environmental and political) in cocoa farming which are not considered as sustainability issues in the most certification programmes. Fourthly, there is little knowledge about the channels through which the farm-level ethical cocoa reach chocolate firms. There is the need to understand ethical values beyond the farm level of the supply chain by addressing how ethical are these channels are, the actors involved, the infrastructure and structural dimensions of the channels, the traceability mechanisms and the politics associated with them. There should also be a focus on the ecological dimension of these channels. For example, if farmers are producing cocoa but the transportation and shipment process cause a lot of emission of greenhouse gases, then the search for ethical cocoa still remains unresolved. Understanding the traceability of ethical cocoa and its "green" dimension will be helpful. Moreover, more research is needed regarding the livelihood implications of both cocoa monoculture and agroforestry in terms of their environmental performance for field cocoa crops such as soil improvement, crops' resistance to pests, disease and drought. The socio-political aspect of cocoa agroforestry should also be considered in the future especially the gender and labour implications of transitioning towards cocoa agroforestry. Future research should try to relate certification programmes to current global issues like the COVID-19 pandemic in order to understand the coping and adaptation strategies of certified farmers in response to the state and market power dynamics.

A more comprehensive knowledge could be produced if these proposed studies employ mixed method approach (qualitative and quantitative) as methodological strategy. Again, findings and arguments should be guided by existing theories and framework.

This will contribute to the development of knowledge that will inform our decisions, actions and behaviours.

Reference

Abbadi, S., Senadza, B., Lieuw-Kie-Song, M., & Abebe, H. (2019). *Assessing the Employment Effects of Processing Cocoa in Ghana*. 51.

Abdulai, A., & Rieder, P. (1995). The Impacts of Agricultural Price Policy on Cocoa Supply in Ghana: An Error Correction Estimation. *Journal of African Economies*, *4*(3), 315–335. https://doi.org/10.1093/oxfordjournals.jae.a036837

Abenyega, O., & Gockowski, J. (2003). *Labor practices in the cocoa sector of Ghana with a special focus on the role of children*. 42.

Aboa, A. (2021). Top cocoa producers threaten to name and shame brands over premiums. *Reuters*. https://www.reuters.com/article/ivorycoast-ghana-cocoa-idUSL5N2O3518

Aboa, A., & Angel, M. (2020). Ivory Coast, Ghana cancel cocoa sustainability schemes run by Hershey. *Reuters*. https://uk.reuters.com/article/us-cocoa-poverty-dispute-idUKKBN28A227

Abugre, S., & Kazaare, F. (2011). Trends and status of illegal timber logging in three forest districts of the Brong-Ahafo Region of Ghana. *Ghana Journal of Forestry*, *26*. https://doi.org/10.4314/gjf.v26i1.66204

Acey, C. S. (2019). Silence and Voice in Nigeria's Hybrid Urban Water Markets: Implications for Local Governance of Public Goods. *International Journal of Urban and Regional Research*, *43*(2), 313–336. https://doi.org/10.1111/1468-2427.12715

Achabou, M. A., Dekhili, S., & Hamdoun, M. (2017). Environmental Upgrading of Developing Country Firms in Global Value Chains. *Business Strategy and the Environment*, *26*(2), 224–238. https://doi.org/10.1002/bse.1911

Acheampong, E. O., Macgregor, C. J., Sloan, S., & Sayer, J. (2019). Deforestation is driven by agricultural expansion in Ghana's forest reserves. *Scientific African*, *5*, e00146. https://doi.org/10.1016/j.sciaf.2019.e00146

Adams, W. M., & Hutton, J. (2007). People, Parks and Poverty: Political Ecology and Biodiversity Conservation. *Conservation and Society*, *5*(2), 147. http://www.conservationandsociety.org/article.asp?issn=0972-4923;year=2007;volume=5;issue=2;spage=147;epage=183;aulast=Adams;type=0

Adger, W. N., Benjaminsen, T. A., Brown, K., & Svarstad, H. (2001). Advancing a Political Ecology of Global Environmental Discourses. *Development and Change*, *32*(4), 681–715. https://doi.org/10.1111/1467-7660.00222

Adomako, B., & Adu-Ampomah, Y. (2000). Reflections on the yield of Upper Amazon cocoa hybrids in Ghana with reference to breeding for cocoa swollen shoot virus resistant varieties. *Cocoa Growers' Bulletin*, *No. 52*, 33–45. https://www.cabdirect.org/cabdirect/abstract/20013065396

Adonteng-Kissi, O. (2020). Child Labour Versus Realising Children's Right to Provision, Protection, and Participation in Ghana. *Australian Social Work*, *0*(0), 1–16. https://doi.org/10.1080/0312407X.2020.1742363

Agrawal, A. (1995). Dismantling the Divide Between Indigenous and Scientific Knowledge. *Development and Change*, *26*(3), 413–439. https://doi.org/10.1111/j.1467-7660.1995.tb00560.x

Agrawal, A. (2005). *Environmentality: Technologies of Government and the Making of Subjects*. Duke University Press.

Agyare-Kwabi, P. (2009). Gender Mainstreaming into the CNFA, BMGF-Funded Cocoa Project in Ghana. *Accra, Jeavco Associates Ltd., Ghana*.

Agyei, F. K. (2019). *Kwame Nkrumah University of Science and Technology, Kumasi College of Agriculture and Natural Resources, Faculty of Renewable Natural Resources.Ddepartment of Silviculture and Forest management*.

Akrofi, A. Y., Amoako-Atta, I., Assuah, M., & Asare, E. K. (2015). Black pod disease on cacao (Theobroma cacao, L) in Ghana: Spread of Phytophthora megakarya and role of economic plants in the disease epidemiology. *Crop Protection*, *72*, 66–75. https://doi.org/10.1016/j.cropro.2015.01.015

Alence, R. (1990). The 1937-1938 Gold Coast Cocoa Crisis: The Political Economy of Commercial Stalemate. *African Economic History*, *19*, 77–104. JSTOR. https://doi.org/10.2307/3601893

Almeida, I., & Bassompierre, L. de. (2021). Chocolate War Leaves Top Cocoa Producer Stuck With Beans. *Bloomberg.Com*. https://www.bloomberg.com/news/articles/2021-01-20/chocolate-war-leaves-world-s-top-cocoa-producer-stuck-with-beans

Amanor, K. (1994). *The New Frontiers: Farmers' Response to Land Degradation. A west African Study*. Zed Books Ltd.

Amanor, K. (2001a). *Land, Labour and the Family in Southern Ghana: A critique of land policy under neo-liberalisation*. Nordic Africa Institute.

Amanor, K. (2001b). *Land, Labour and the Family in Southern Ghana: A critique of land policy under neo-liberalisation*. Nordic Africa Institute.

Amanor, K. S. (1994). The new frontier: Farmers' response to land degradation-a west african study. *Revisiting Sustainable Development*, *159*.

Amanor, K. S. (2001). Land, labour and the family in Southern Ghana. *A Critique*.

Amanor, K. S. (2005). *Agricultural markets in West Africa: Frontiers, agribusiness and social differentiation*.

Amanor, K. S. (2010a). Family values, land sales and agricultural commodification in south-eastern ghana. *Africa: Journal of the International African Institute*, *80*(1), 104–125. http://www.jstor.org/stable/40645379

Amanor, K. S. (2010b). Family Values, Land Sales and Agricultural Commodification in South-Eastern Ghana. *Africa*, *80*(1), 104–125. https://doi.org/10.3366/E0001972009001284

Amanor, K. S. (2011). Youth, migrants and agribusiness in cocoa frontiers: Land, labour, child trafficking and the crises of governance in West Africa. *Uneanthropologie Entre Pouvoirs et Histoire: Conversations Autour de l'oeuvre de Jean-Pierre Chauveau*, 93–124.

Amanor, K., Ubink, J., & Berry, S. (2008). *Contesting Land and Custom in Ghana: State, chief and the citizen*. Leiden University Press.

Amanor, K., Yaro, J., & Teye, J. (2020). *Long-Term Change And Agricultural Commercialisation In Ghanaian Cocoa*. APRA, Future Agricultures Consortium. https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/15270

Amanor-Wilks, D.-E. (2009). Land, labour and gendered livelihoods in a "peasant" and a "settler" economy. *Feminist Africa 12 Land, Labour and Gendered Livelihoods*.

Amin, A. (1998). Globalisation and Regional Development: A Relational Perspective. *Competition & Change*, *3*(1–2), 145–165. https://doi.org/10.1177/102452949800300106

Amoah, J. E. K. (1995). *Development of consumption, commercial production and marketing*. Jemre Enterprises.

Ansah, E. O., Kaplowitz, M. D., Lupi, F., & Kerr, J. (2020). Smallholder participation and procedural compliance with sustainable cocoa certification programs. *Agroecology and Sustainable Food Systems*, *44*(1), 54–87. https://doi.org/10.1080/21683565.2019.1579776

Arentsen, M. J., Falkner, R., & Kalfagianni, A. (2009). *Corporate Power in Global Agrifood Governance*. MIT Press.

Arhin, K. (1985). The Expansion of Cocoa Production: The working conditions of migrant cocoa farmers in the Central and Western Regions. *Accra: University of Ghana, Legon*.

Asare, A. R. (2010). *Cocoa establishment and shade management in Ghana's Ashanti region: Understanding the main factors driving farmers' decision processes and practices*. Yale University.

Asare, R. (2016). *The relationships between on-farm shade trees and cocoa yields in Ghana*.

Asare, R., Afari-Sefa, V., & Muilerman, S. (2016). Access to improved hybrid seeds in ghana: implications for establishment and rehabilitation of cocoa farms. *Experimental Agriculture*, *54*(2), 273–285. https://doi.org/10.1017/S0014479716000247

Asiedu, K. G. (2019). *Ghana is losing its rainforest faster than any other country in the world*. World Economic Forum. https://www.weforum.org/agenda/2019/05/ghana-is-losing-its-rainforest-faster-than-any-other-country-in-the-world/

Asner, G. P., Elmore, A. J., Olander, L. P., Martin, R. E., & Harris, A. T. (2004). Grazing Systems, Ecosystem Responses, and Global Change. *Annual Review of Environment and Resources*, *29*(1), 261–299. https://doi.org/10.1146/annurev.energy.29.062403.102142

Atuahene, B. (2007). From Reparation to Restoration: Moving beyond Restoring Property Rights to Restoring Political and Economic Visbility. *SMUL Rev.*, *60*, 1419.

Austin, G. (1987). The emergence of capitalist relations in South Asante cocoa-farming, c. 1916–33. *The Journal of African History*, *28*(2), 259–279.

Austin, G. (1996). Mode of production or mode of cultivation: Explaining the failure of European cocoa planters in competition with African farmers in colonial Ghana. In *Cocoa Pioneer Fronts since 1800* (pp. 154–175). Springer.

Austin, G. (1997). Review of Cocoa Diseases and Politics in Ghana, 1909-1966 [Review of *Review of Cocoa Diseases and Politics in Ghana, 1909-1966*, by F. Danquah]. *The International Journal of African Historical Studies*, *30*(2), 387–389. https://doi.org/10.2307/221250

Austin, G. (2005). *Labour, land, and capital in Ghana: From slavery to free labour in Asante, 1807-1956* (Vol. 18). Boydell & Brewer.

Avelino, F. (2017). Power in Sustainability Transitions: Analysing power and (dis)empowerment in transformative change towards sustainability. *Environmental Policy and Governance*, *27*(6), 505–520. https://doi.org/10.1002/eet.1777

Bacon, C. (2005). Confronting the Coffee Crisis: Can Fair Trade, Organic, and Specialty Coffees Reduce Small-Scale Farmer Vulnerability in Northern Nicaragua? *World Development*, *33*(3), 497–511. https://doi.org/10.1016/j.worlddev.2004.10.002

Bacon, C. M., Ernesto Méndez, V., Gómez, M. E. F., Stuart, D., & Flores, S. R. D. (2008). Are Sustainable Coffee Certifications Enough to Secure Farmer Livelihoods? The Millenium Development Goals and Nicaragua's Fair-Trade Cooperatives. *Globalizations*, *5*(2), 259–274. https://doi.org/10.1080/14747730802057688

Bair, J. (2008). Surveying the Post-MFA Landscape: What Prospects for the Global South Post-Quota? *Competition & Change*, *12*(1), 3–10. https://doi.org/10.1179/102452907X264494

Bair, J. (2009). Global commodity chains. *Frontiers of Commodity Chain Research*, 1–34.

Barham, E. (2002). Towards a theory of values-based labeling. *Agriculture and Human Values*, *19*(4), 349–360. https://doi.org/10.1023/A:1021152403919

Barrientos, S. (2013). *Gender Production Networks: Sustaining Cocoa-Chocolate Sourcing in Ghana and India* (SSRN Scholarly Paper ID 2278193). Social Science Research Network. https://doi.org/10.2139/ssrn.2278193

Barrientos, S. (2014a). Gendered Global Production Networks: Analysis of Cocoa–Chocolate Sourcing. *Regional Studies*, *48*(5), 791–803. https://doi.org/10.1080/00343404.2013.878799

Barrientos, S. (2014b). *Gender and Global Value Chains: Challenges of Economic and Social Upgrading in Agri-Food* (SSRN Scholarly Paper ID 2503391). Social Science Research Network. https://doi.org/10.2139/ssrn.2503391

Barrientos, S. (2019). *Gender and Work in Global Value Chains: Capturing the Gains?* Cambridge University Press.

Barrientos, S., Asenso-Okyere, K., Asuming-Brempong, S., Sarpong, D., Anyidoho, N., Kaplinsky, R., & Leavy, J. (2008). Mapping sustainable production in Ghanaian cocoa: Report to Cadbury. *Institute of Development Studies, University of Sussex, and University of Ghana*.

Barrientos, S., Gereffi, G., & Rossi, A. (2011). Economic and social upgrading in global production networks: A new paradigm for a changing world. *International Labour Review*, *150*(3–4), 319–340. https://doi.org/10.1111/j.1564-913X.2011.00119.x

Barrientos, S., Kothari, U., & Phillips, N. (2013). Dynamics of Unfree Labour in the Contemporary Global Economy. *The Journal of Development Studies*, *49*(8), 1037–1041. https://doi.org/10.1080/00220388.2013.780043

Barrientos, S., Mayer, F., Pickles, J., & Posthuma, A. (2011). Decent work in global production networks: Framing the policy debate. *International Labour Review*, *150*(3–4), 297–317. https://doi.org/10.1111/j.1564-913X.2011.00118.x

Barrientos, S., & Visser, M. (2012). *South African Horticulture: Opportunities and Challenges for Economic and Social Upgrading in Value Chains* (SSRN Scholarly Paper ID 2209718). Social Science Research Network. https://doi.org/10.2139/ssrn.2209718

Barrientos, S. W. (2013). 'Labour Chains': Analysing the Role of Labour Contractors in Global Production Networks. *The Journal of Development Studies*, *49*(8), 1058–1071. https://doi.org/10.1080/00220388.2013.780040

Bassett, T. J., & Zuéli, K. B. (2000). Environmental Discourses and the Ivorian Savanna. *Annals of the Association of American Geographers*, *90*(1), 67–95. https://doi.org/10.1111/0004-5608.00184

Bassompierre, L. de. (2020). Child Labor Rises in Top Cocoa Producer During Lockdown: Report. *Bloomberg.Com*. https://www.bloomberg.com/news/articles/2020-07-01/child-labor-rises-in-top-cocoa-producer-during-lockdown-report-kc3h9czv

Bassompierre, L. de, & Jha, M. (2019). Chocolate Makers Face Sustainability Dilemma Over Farmers' Pay. *Bloomberg.Com*. https://www.bloomberg.com/news/articles/2019-10-13/chocolate-makers-face-ultimatum-over-pay-for-poor-cocoa-farmers

Becchetti, L., & Costantino, M. (2008). Fair Trade on marginalised producers: An impact analysis on Kenyan farmers. *World Development*, *36*(5), 823–842.

Beckman, B. (1977). Peasants, capital and the State. *Review of African Political Economy*, *10*, 1–7.

Benjaminsen, T. A., & Bryceson, I. (2012). Conservation, green/blue grabbing and accumulation by dispossession in Tanzania. *The Journal of Peasant Studies*, *39*(2), 335–355. https://doi.org/10.1080/03066150.2012.667405

Benjaminsen, T. A., & Robbins, P. (2015). Nordic political ecologies. *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, *69*(4), 191–196. https://doi.org/10.1080/00291951.2015.1059879

Benjaminsen, T. A., & Svarstad, H. (2021). *Political Ecology: A Critical Engagement with Global Environmental Issues* (1st ed. 2021 edition). Palgrave Macmillan.

Bergius, M., Benjaminsen, T. A., Maganga, F., & Buhaug, H. (2020). Green economy, degradation narratives, and land-use conflicts in Tanzania. *World Development*, *129*, 104850. https://doi.org/10.1016/j.worlddev.2019.104850

Bernstein, H. (1977). Notes on capital and peasantry. *Review of African Political Economy*, *4*(10), 60–73.

Bernstein, H. (1979). African peasantries: A theoretical framework. *The Journal of Peasant Studies*, *6*(4), 421–443. https://doi.org/10.1080/03066157908438084

Bernstein, H. (2010). *Class dynamics of agrarian change* (Vol. 1). Kumarian Press.

Berry, S. (1989a). Access, control and use of resources in African agriculture: An introduction. *Africa*, *59*(1), 1–5.

Berry, S. (1989b). Social institutions and access to resources. *Africa*, *59*(1), 41–55.

Berry, S. (1993). *No condition is permanent: The social dynamics of agrarian change in sub-Saharan Africa*. University of Wisconsin Pres.

Berry, S. (1997). Tomatoes, land and hearsay: Property and history in asante in the time of structural adjustment. *World Development*, *25*(8), 1225–1241. https://doi.org/10.1016/S0305-750X(97)00039-9

Berry, S. (2018). Migrant cocoa farmers of southern Ghana: A study in rural capitalism, by Polly Hill. *The Journal of Peasant Studies*, *45*(7), 1539–1547. https://doi.org/10.1080/03066150.2018.1464258

Bevir, M. (2008). *Key Concepts in Governance*. SAGE.

Bevir, M. (2013). *A Theory of Governance*. https://escholarship.org/uc/item/2qs2w3rb

Bhagwat, S. A., Willis, K. J., Birks, H. J. B., & Whittaker, R. J. (2008). Agroforestry: A refuge for tropical biodiversity? *Trends in Ecology & Evolution*, *23*(5), 261–267. https://doi.org/10.1016/j.tree.2008.01.005

Bigg, M. M. (2017). Ghana to subsidise fertiliser for cocoa farmers. *CNBC Africa*. https://www.cnbcafrica.com/west-africa/2017/04/24/ghana-subsidise-fertiliser-cocoa-farmers/

Blackman, A., & Naranjo, M. A. (2012). Does eco-certification have environmental benefits? Organic coffee in Costa Rica. *Ecological Economics*, *83*, 58–66. https://doi.org/10.1016/j.ecolecon.2012.08.001

Blaikie, P. (1985). *The Political Economy of Soil Erosion in Developing Countries*. Routledge.

Blaikie, P., & Brookfield, H. (1987). *Land Degradation and Society*. Methuen.

Blowfield, M. E., & Dolan, C. S. (2008). Stewards of Virtue? The Ethical Dilemma of CSR in African Agriculture. *Development and Change*, *39*(1), 1–23. https://doi.org/10.1111/j.1467-7660.2008.00465.x

Boas, M., & Huser, A. (2006). *Child labour and cocoa production in West Africa: The case of Côte d'Ivoire and Ghana*. Fafo Institute for Applied Social Science.

Boateng, D. O., Codjoe, F. N. Y., & Ofori, J. (2014). *Impact of illegal small scale mining (Galamsey) on cocoa production in Atiwa district of Ghana*. 11.

Bolwig, S., Ponte, S., Toit, A. D., Riisgaard, L., & Halberg, N. (2010). Integrating Poverty and Environmental Concerns into Value-Chain Analysis: A Conceptual Framework. *Development Policy Review*, *28*(2), 173–194. https://doi.org/10.1111/j.1467-7679.2010.00480.x

Bose, P., Arts, B., & van Dijk, H. (2012). 'Forest governmentality': A genealogy of subject-making of forest-dependent 'scheduled tribes' in India. *Land Use Policy*, *29*(3), 664–673. https://doi.org/10.1016/j.landusepol.2011.11.002

Bourdieu, P. (1977). *Outline of a Theory of Practice*. Cambridge University Press.

Bourdieu, P. (1986). Handbook of Theory and Research for the Sociology of Education. *The Forms of Capital*, *241*, 258.

Bourdieu, P. (1989). Social Space and Symbolic Power. *Sociological Theory*, *7*(1), 14–25. https://doi.org/10.2307/202060

Brannstrom, C., & Vadjunec, J. M. (2014). *Land Change Science, Political Ecology, and Sustainability: Synergies and divergences*. Routledge.

Bray, F. R. (1959). Cocoa development in Ahafo, West Ashanti. *Cocoa Development in Ahafo, West Ashanti*.

Bryant, R. L. (2015). *The international handbook of political ecology*. Edward Elgar Publishing.

Bryant, R. L., & Bailey, S. (1997). *Third World Political Ecology*. Psychology Press.

Burnett, K., & Murphy, S. (2014). What place for international trade in food sovereignty? *The Journal of Peasant Studies*, *41*(6), 1065–1084. https://doi.org/10.1080/03066150.2013.876995

Busch, L., & Bingen, J. (2006). Introduction: A New World of Standards. In J. Bingen & L. Busch (Eds.), *Agricultural Standards: The Shape of the Global Food and Fiber System* (pp. 3–28). Springer Netherlands. https://doi.org/10.1007/1-4020-3984-0_1

Calo, M., & Wise, T. A. (2005). *Revaluing Peasant Coffee Production:* 61.

Carney, J. A. (1988). Struggles over crop rights and labour within contract farming households in a Gambian irrigated rice project. *The Journal of Peasant Studies*, *15*(3), 334–349. https://doi.org/10.1080/03066158808438366

Carney, J. A. (1992). Peasant women and economic transformation in the Gambia. *Development and Change*, *23*(2), 67–90.

Carney, J. A. (1994). *Contracting a food staple in The Gambia*. University of Wisconsin Press. https://vtechworks.lib.vt.edu/handle/10919/68263

Cashore, B. (2002). Legitimacy and the Privatization of Environmental Governance: How Non–State Market–Driven (NSMD) Governance Systems Gain Rule–

Making Authority. *Governance*, *15*(4), 503–529. https://doi.org/10.1111/1468-0491.00199

Cashore, B. W., Auld, G., & Newsom, D. (2004). *Governing through markets: Forest certification and the emergence of non-state authority*. Yale University Press.

Cavanagh, C., & Benjaminsen, T. A. (2014). Virtual nature, violent accumulation: The 'spectacular failure' of carbon offsetting at a Ugandan National Park. *Geoforum*, *56*, 55–65. https://doi.org/10.1016/j.geoforum.2014.06.013

Cavanagh, C. J., & Benjaminsen, T. A. (2015). Guerrilla agriculture? A biopolitical guide to illicit cultivation within an IUCN Category II protected area. *Journal of Peasant Studies*, *42*(3–4), 725–745.

Chambers, R. (1989). *Editorial introduction: Vulnerability, coping and policy*.

Chandrasekhar, A. (2021). *Is child labour really that bad?* SWI Swissinfo.Ch. https://www.swissinfo.ch/eng/is-child-labour-really-that-bad-/46579464

Chayanov, A. V. (1986). *AV Chayanov on the theory of peasant economy*. Manchester University Press.

Chazdon, R. L., Harvey, C. A., Komar, O., Griffith, D. M., Ferguson, B. G., Martínez-Ramos, M., Morales, H., Nigh, R., Soto-Pinto, L., Breugel, M. V., & Philpott, S. M. (2009). Beyond Reserves: A Research Agenda for Conserving Biodiversity in Human-modified Tropical Landscapes. *Biotropica*, *41*(2), 142–153. https://doi.org/10.1111/j.1744-7429.2008.00471.x

Clifford, N., Cope, M., Gillespie, T., & French, S. (2016). *Key Methods in Geography*. SAGE.

Coe, N. M., Dicken, P., & Hess, M. (2008). Global production networks: Realizing the potential. *Journal of Economic Geography*, *8*(3), 271–295. https://doi.org/10.1093/jeg/lbn002

Colchester, M. (1994). *Asian Loggers Move in on Guyana's Forests*. 8.

Cooke, A. M., Curran, S. R., Linton, A., & Schrank, A. (2008). Introduction: Agriculture, Trade, and the Global Governance of Food. *Globalizations*, *5*(2), 99–106. https://doi.org/10.1080/14747730802057399

Corson, C. (2011). Territorialization, enclosure and neoliberalism: Non-state influence in struggles over Madagascar's forests. *The Journal of Peasant Studies*, *38*(4), 703–726. https://doi.org/10.1080/03066150.2011.607696

Cox, R. W. (1987). *Production, power, and world order: Social forces in the making of history* (Vol. 1). Columbia University Press.

Crane, A., LeBaron, G., Allain, J., & Behbahani, L. (2019). Governance gaps in eradicating forced labor: From global to domestic supply chains. *Regulation & Governance*, *13*(1), 86–106. https://doi.org/10.1111/rego.12162

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Dale, G. (2010). *Karl Polanyi: The limits of the market*. Polity.

Dallas, M., Ponte, S., & Sturgeon, T. (2017). A typology of power in global value chains. *Copenhagen Business School, Working Paper*, 1–35.

Denslow, J. S., & Padoch, C. (1988). *People of the Tropical Rain Forest*. University of California Press.

Dicken, P. (2007). *Global shift: Mapping the changing contours of the world economy*. SAGE Publications Ltd.

Dicken, P. (2015). *Global Shift, Seventh Edition: Mapping the Changing Contours of the World Economy*. Guilford Press New York.

Dicken, P., & Malmberg, A. (2001). Firms in Territories: A Relational Perspective*. *Economic Geography*, *77*(4), 345–363. https://doi.org/10.1111/j.1944-8287.2001.tb00169.x

Dickson, K.B., 1969. A historical geography of Ghana. Cambridge University Press, Cambridge.

Dolan, C., & Humphrey, J. (2000). Governance and Trade in Fresh Vegetables: The Impact of UK Supermarkets on the African Horticulture Industry. *The Journal of Development Studies*, *37*(2), 147–176. https://doi.org/10.1080/713600072

Dontoh, E., Mieu, B., & Almeida, I. (2019). Against the Tide, Cocoa Growers Plan to Suspend Ethical Programs. *Bloomberg.Com*. https://www.bloomberg.com/news/articles/2019-10-18/against-the-tide-cocoa-growers-plan-to-suspend-ethical-programs

Dowding, K. (2008). Agency and structure: Interpreting power relationships. *Journal of Power*, *1*(1), 21–36. https://doi.org/10.1080/17540290801943380

Dowie, M. (2011). *Conservation Refugees: The Hundred-Year Conflict between Global Conservation and Native Peoples*. MIT Press.

Dunaway, W. A. (2013). *Gendered Commodity Chains: Seeing Women's Work and Households in Global Production*. Stanford University Press.

Edwin, J., & Masters, W. A. (2005). GENETIC IMPROVEMENT AND COCOA YIELDS IN GHANA. *Experimental Agriculture*, *41*(4), 491–503. https://doi.org/10.1017/S0014479705002887

Ellis, F. (1993). *Peasant Economics: Farm Households in Agrarian Development*. Cambridge University Press.

Ellis, F. (1998). Household strategies and rural livelihood diversification. *Journal of Development Studies*, *35*(1), 1–38. https://doi.org/10.1080/00220389808422553

Ellis, F. (2000). The Determinants of Rural Livelihood Diversification in Developing Countries. *Journal of Agricultural Economics*, *51*(2), 289–302. https://doi.org/10.1111/j.1477-9552.2000.tb01229.x

Engelstad, F. (Ed.). (1999). *Om makt: Teori og kritikk* (1. utg). Ad Notam Gyldendal.

Escobar, A. (1995). *Encountering Development: The Making and Unmaking of the Third World*. Princeton University Press.

Evers, B., Opondo, M., Barrientos, S., Krishnan, A., Amoding, F., & Ndlovu, L. (2014). *Global and regional supermarkets: Implications for producers and workers in Kenyan and Ugandan horticulture*.

https://www.research.manchester.ac.uk/portal/en/publications/global-and-regional-supermarkets(ed763e01-ada9-4073-ac33-72e6d6b9c5d4).html

Fairbairn, M., Fox, J., Isakson, S. R., Levien, M., Peluso, N., Razavi, S., Scoones, I., & Sivaramakrishnan, K. (2014). *Introduction: New directions in agrarian political economy*. Taylor & Francis.

Fairhead, J., & Leach, M. (1996). *Misreading the African landscape: Society and ecology in a forest-savanna mosaic* (Vol. 90). Cambridge University Press.

FAIRTRADE. (2016). *Fairtrade and Cocoa: Cocoa Commodity briefing*. https://www.fairtrade.org.uk/wp-content/uploads/legacy/Cocoa-commodity-briefing-6May16.pdf

Fay, D., & James, D. (2008). *The rights and wrongs of land restitution:'Restoring what was ours'*. Routledge.

Fengru, C., & Guitang, L. (2018). *Global Value Chains and Production Networks: Case Studies of Siemens and Huawei*. Academic Press.

Ferguson, J. (1994). *The anti-politics machine:'development', depoliticization and bureaucratic power in Lesotho*. University of Minnesota.

Field, M. J. (1943). The agricultural system of the Manya-Krobo of the Gold Coast. *Africa*, *14*(2), 54–65.

Flachs, A., & Richards, P. (2018). Playing development roles: The political ecology of performance in agricultural development. *Journal of Political Ecology*, *25*(1), 638–646.

Fletcher, R. (2010). Neoliberal environmentality: Towards a poststructuralist political ecology of the conservation debate. *Conservation and Society*, *8*(3), 171. https://doi.org/10.4103/0972-4923.73806

Foggie, A., & Piasecki, B. (1962). Timber, fuel and minor forest produce. *Wills (Ed)*, 236–251.

Foley, J. A., DeFries, R., Asner, G. P., Barford, C., Bonan, G., Carpenter, S. R., Chapin, F. S., Coe, M. T., Daily, G. C., Gibbs, H. K., Helkowski, J. H., Holloway, T., Howard, E. A., Kucharik, C. J., Monfreda, C., Patz, J. A., Prentice, I. C., Ramankutty, N., & Snyder, P. K. (2005). Global Consequences of Land Use. *Science*, *309*(5734), 570–574. https://doi.org/10.1126/science.1111772

Folke, C., Österblom, H., Jouffray, J.-B., Lambin, E. F., Adger, W. N., Scheffer, M., Crona, B. I., Nyström, M., Levin, S. A., Carpenter, S. R., Anderies, J. M., Chapin, S., Crépin, A.-S., Dauriach, A., Galaz, V., Gordon, L. J., Kautsky, N., Walker, B. H., Watson, J. R., … de Zeeuw, A. (2019). Transnational corporations and the challenge of biosphere stewardship. *Nature Ecology & Evolution*, *3*(10), 1396–1403. https://doi.org/10.1038/s41559-019-0978-z

Forsyth, T. (2003). *Critical Political Ecology: The Politics of Environmental Science*. Psychology Press.

Forsyth, T., & Walker, A. (2008). *Forest guardians, forest destroyers: The politics of environmental knowledge in northern Thailand*. University of Washington Press.

Foucault, M. (1977). *Discipline and Punish: The Birth of the Prison*. Penguin UK.

Foucault, M. (1991). *The Foucault Effect: Studies in Governmentality*. University of Chicago Press.

Foucault, M., Davidson, A. I., & Burchell, G. (2008). *The Birth of Biopolitics: Lectures at the Collège de France, 1978-1979*. Springer.

Fountain, A., & Huetz-Adams, F. (2018). *Cocoa Barometer 2018*.

Frankenberger, T. R., & McCaston, M. K. (1998). The household livelihood security concept. *Food Nutrition and Agriculture*, 30–35.

Gaitán-Cremaschi, D., Klerkx, L., Duncan, J., Trienekens, J. H., Huenchuleo, C., Dogliotti, S., Contesse, M. E., & Rossing, W. A. H. (2019). Characterizing diversity of food systems in view of sustainability transitions. A review. *Agronomy for Sustainable Development*, *39*(1). https://doi.org/10.1007/s13593-018-0550-2

Galtung, J. (1969). Violence, Peace, and Peace Research. *Journal of Peace Research*, *6*(3), 167–191. https://doi.org/10.1177/002234336900600301

Galtung, J. (1996). *Peace by peaceful means: Peace and conflict, development and civilization* (Vol. 14). Sage.

Geels, F. W. (2002). Technological transitions as evolutionary reconfiguration processes: A multi-level perspective and a case-study. *Research Policy*, *31*(8), 1257–1274. https://doi.org/10.1016/S0048-7333(02)00062-8

Geels, F. W. (2011). The multi-level perspective on sustainability transitions: Responses to seven criticisms. *Environmental Innovation and Societal Transitions*, *1*(1), 24–40. https://doi.org/10.1016/j.eist.2011.02.002

Geels, F. W., & Schot, J. (2007). Typology of sociotechnical transition pathways. *Research Policy*, *36*(3), 399–417. https://doi.org/10.1016/j.respol.2007.01.003

Gemici, K. (2008). Karl Polanyi and the antinomies of embeddedness. *Socio-Economic Review*, *6*(1), 5–33. https://doi.org/10.1093/ser/mwl034

Gereffi, G. (1994). The organization of buyer-driven global commodity chains: How US retailers shape overseas production networks. *Contributions in Economics and Economic History*, 95–95.

Gereffi, G. (1995). *Global production systems and third world development*. Global Studies Research Program, University of Wisconsin-Madison.

Gereffi, G., Garcia-Johnson, R., & Sasser, E. (2001). The NGO-industrial complex. *Foreign Policy*, *125*, 56.

Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The governance of global value chains. *Review of International Political Economy*, *12*(1), 78–104. https://doi.org/10.1080/09692290500049805

Gereffi, G., & Korzeniewicz, M. (1994). *Commodity chains and global capitalism*. ABC-CLIO.

Gereffi, G., Lee, J., & Christian, M. (2008). *The Governance Structures of U.S.-Based Food and Agriculture Value Chains and their Relevance to Healthy Diets:*

Paper prepared for the Healthy Eating Research Program, Robert Wood Johnson Foundation.

Ghani, A. (1995). *Production and reproduction of property as a bundle of powers: Afghanistan 1774–1901*. https://scholar.google.com/scholar_lookup?hl=en&publication_year=1995&author=A.+Ghani&title=Production+and+reproduction+of+property+as+a+bundle+of+powers%3A+Afghanistan+1774%E2%80%931901

Gibbon, P., Bair, J., & Ponte, S. (2008). Governing global value chains: An introduction. *Economy and Society*, *37*(3), 315–338. https://doi.org/10.1080/03085140802172656

Gibbon, P., & Ponte, S. (2005). *Trading Down: Africa, Value Chains, and the Global Economy*. Temple University Press.

Gibbon, P., & Ponte, S. (2008). Global value chains: From governance to governmentality? *Economy and Society*, *37*(3), 365–392. https://doi.org/10.1080/03085140802172680

Gibbon, P., Ponte, S., & Lazaro, E. (2010). *Global agro-food trade and standards: Challenges for Africa*. Springer.

Giuliani, E., Ciravegna, L., Vezzulli, A., & Kilian, B. (2017). Decoupling Standards from Practice: The Impact of In-House Certifications on Coffee Farms' Environmental and Social Conduct. *World Development*, *96*, 294–314. https://doi.org/10.1016/j.worlddev.2017.03.013

Glin, L. C., Oosterveer, P., & Mol, A. P. (2015). Governing the Organic Cocoa Network from G hana: Towards Hybrid Governance Arrangements? *Journal of Agrarian Change*, *15*(1), 43–64.

Gockowski, J., Afari-Sefa, V., Sarpong, D. B., Osei-Asare, Y. B., & Agyeman, N. F. (2013). Improving the productivity and income of Ghanaian cocoa farmers while maintaining environmental services: What role for certification? *International Journal of Agricultural Sustainability*, *11*(4), 331–346. https://doi.org/10.1080/14735903.2013.772714

Gockowski, J., Robiglio, V., Muilerman, S., & Agyeman, N. F. (2010). *Agricultural intensification as a strategy for climate mitigation in Ghana*.

Gockowski, J., & Sonwa, D. (2007). Biodiversity conservation and smallholder cocoa production systems in West Africa with particular reference to the Western Region of Ghana and the Bas Sassandra region of Côte d'Ivoire. *Draft Paper, Institute of Tropical Agriculture, Ibadan, Nigeria. Http://Www. Odi. Org. Uk/Events/2007/11/19/434-Paper-Discussion-Biodiversity-Conservationsmallholder-Cocoa-Production-Systems-West-Africa. Pdf*.

Gockowski, J., & Sonwa, D. (2011). Cocoa Intensification Scenarios and Their Predicted Impact on CO2 Emissions, Biodiversity Conservation, and Rural Livelihoods in the Guinea Rain Forest of West Africa. *Environmental Management*, *48*(2), 307–321. https://doi.org/10.1007/s00267-010-9602-3

Gockowski, J., Weise, S., Sonwa, D., Tchatat, M., & Ngobo, M. (2004). Conservation because it pays: Shaded cocoa agroforests in West Africa. *National Academy of Sciences in Washington DC on February*, *10*(2004), 29.

Goodman, D., DuPuis, E. M., & Goodman, M. K. (2012a). *Alternative food networks: Knowledge, practice, and politics*. Routledge.

Goodman, D., DuPuis, E. M., & Goodman, M. K. (2012b). *Alternative Food Networks: Knowledge, Practice, and Politics*. Routledge.

Goodman, D., DuPuis, E. M., Goodman, M. K., DuPuis, E. M., & Goodman, M. K. (2012). *Alternative Food Networks: Knowledge, Practice, and Politics*. Routledge. https://doi.org/10.4324/9780203804520

Goodman, D., & Watts, M. (1994). Reconfiguring the rural or fording the divide?: Capitalist restructuring and the global agro-food system. *The Journal of Peasant Studies*, *22*(1), 1–49. https://doi.org/10.1080/03066159408438565

Goodman, M., & Bryant, R. (2009). The ethics of sustainable consumption governance: Exploring the cultural economies of 'alternative'retailing. *Environment, Politics and Development Working Paper Series. Department of Geography, King's College London, Paper*, *15*.

Goodman, M. K. (2004). Reading fair trade: Political ecological imaginary and the moral economy of fair trade foods. *Political Geography*, *23*(7), 891–915. https://doi.org/10.1016/j.polgeo.2004.05.013

Goodman, M. K., Johnston, J., & Cairns, K. (2017). Food, media and space: The mediated biopolitics of eating. *Geoforum*, *84*, 161–168. https://doi.org/10.1016/j.geoforum.2017.06.017

Goodman, M. K., Maye, D., & Holloway, L. (2010). *Ethical foodscapes?: Premises, promises, and possibilities*. SAGE Publications Sage UK: London, England.

Grabs, J., & Ponte, S. (2019). The evolution of power in the global coffee value chain and production network. *Journal of Economic Geography*, *19*(4), 803–828. https://doi.org/10.1093/jeg/lbz008

Gramsci, A. (1975). Letters from Prison: Antonio Gramsci. *Nueva York, Estados Unidos: Harper Colophon*.

Granovetter, M. (1985). Economic Action and Social Structure: The Problem of Embeddedness. *American Journal of Sociology*, 30.

Grin, J., Rotmans, J., & Schot, J. (2010). *Transitions to Sustainable Development: New Directions in the Study of Long Term Transformative Change*. Routledge.

Grischow, J. D. (2008). Rural 'Community', Chiefs and Social Capital: The Case of Southern Ghana. *Journal of Agrarian Change*, *8*(1), 64–93. https://doi.org/10.1111/j.1471-0366.2007.00163.x

Green, R.H., Hymer, S.H., 1966. Cocoa in the Gold Coast: a study in the relations between African farmers and agricultural experts. The Journal of Economic History 26, 299–319

Gupta, A. (2005). Narratives of corruption: Anthropological and fictional accounts of the Indian state. *Ethnography*, *6*(1), 5–34. https://doi.org/10.1177/1466138105055663

Gupta, A. (2012). *Red Tape: Bureaucracy, Structural Violence, and Poverty in India*. Duke University Press.

Guthman, J. (2007). The Polanyian Way? Voluntary Food Labels as Neoliberal Governance. *Antipode*, *39*(3), 456–478. https://doi.org/10.1111/j.1467-8330.2007.00535.x

Guthman, J. (2014). *Agrarian Dreams: The Paradox of Organic Farming in California*. Univ of California Press.

Hall, J. B., & Swaine, M. D. (1981). Distribution and ecology of vascular plants in a tropical rain forest. *Junk, The Hague*.

Hall, R., Edelman, M., Jr, S. M. B., Scoones, I., White, B., & Wolford, W. (2015). Resistance, acquiescence or incorporation? An introduction to land grabbing and political reactions 'from below'. *The Journal of Peasant Studies*, *42*(3–4), 467–488. https://doi.org/10.1080/03066150.2015.1036746

Hansen, C. P., & Lund, J. F. (2017). Imagined Forestry: The History of the Scientific Management of Ghana's High Forest Zone. *Environment and History*, *23*(1), 3–38. https://doi.org/10.3197/096734017X14809635325548

Hansen, M. C., Potapov, P. V., Moore, R., Hancher, M., Turubanova, S. A., Tyukavina, A., Thau, D., Stehman, S. V., Goetz, S. J., Loveland, T. R., Kommareddy, A., Egorov, A., Chini, L., Justice, C. O., & Townshend, J. R. G. (2013). High-Resolution Global Maps of 21st-Century Forest Cover Change. *Science*, *342*(6160), 850–853. https://doi.org/10.1126/science.1244693

Harvey, D. (2003). *The new imperialism*. OUP Oxford.

Harvey, D. (2005). *The New Imperialism*. OUP Oxford.

Hatanaka, M., & Busch, L. (2008). Third-Party Certification in the Global Agrifood System: An Objective or Socially Mediated Governance Mechanism? *Sociologia Ruralis*, *48*(1), 73–91. https://doi.org/10.1111/j.1467-9523.2008.00453.x

Hausermann, H. (2010). *Coffee agro-ecosystems, land-use, and the politics of re-regulation in Veracruz, Mexico*. University of Arizona.

Hausermann, H. (2014). Maintaining the coffee canopy: Understanding change and continuity in central Veracruz. *Human Ecology*, *42*(3), 381–394.

Hawthorne, W., & Abu-Juam, M. (1995). *Forest Protection in Ghana: With Particular Reference to Vegetation and Plant Species*. IUCN.

Henderson, J., Dicken, P., Hess, M., Coe, N., & Yeung, H. W.-C. (2002). Global production networks and the analysis of economic development. *Review of International Political Economy*, *9*(3), 436–464. https://doi.org/10.1080/09692290210150842

Higonnet, E., Bellantonio, M., & Hurowitz, G. (2017). CHOCOLATE'S DARK SECRET. *Mighty Earth*, *24*.

Higonnet, E., Hurowitz, G., Cole, A. T., Armstrong, A., & Liviya, J. (2018). Behind the Wrapper: Greenwashing in the Chocolate Industry. *Mighty Earth*.

Hill, P. (1959). The History of the Migration of Ghana Cocoa Farmers. *Transactions of the Historical Society of Ghana*, *4*(1), 14–28.

Hill, P. (1961). The migrant cocoa farmers of southern Ghana. *Africa*, *31*(3), 209–230.

Hill, P. (1963). *The Migrant Cocoa-farmers of Southern Ghana: A Study in Rural Capitalism*. LIT Verlag Münster.

Hinrichs, C. C. (2014). Transitions to sustainability: A change in thinking about food systems change? *Agriculture and Human Values*, *31*(1), 143–155. https://doi.org/10.1007/s10460-014-9479-5

Hope, J. (2020). The anti-politics of sustainable development: Environmental critique from assemblage thinking in Bolivia. *Transactions of the Institute of British Geographers*. https://doi.org/10.1111/tran.12409

Howard, R.E., Howard-Hassmann, R.E., 1978. Colonialism and underdevelopment in Ghana. Croom Helm, London.

Hughes, A., McEwan, C., Bek, D., & Rosenberg, Z. (2014). Embedding Fairtrade in South Africa: Global Production Networks, National Initiatives and Localized Challenges in the Northern Cape. *Competition & Change*, *18*(4), 291–308. https://doi.org/10.1179/1024529414Z.00000000062

Humphrey, J., & Schmitz*, H. (2001). Governance in Global Value Chains. *IDS Bulletin*, *32*(3), 19–29. https://doi.org/10.1111/j.1759-5436.2001.mp32003003.x

Hunter, J. M. (1963). Cocoa migration and patterns of land ownership in the Densu valley near Suhum, Ghana. *Transactions and Papers (Institute of British Geographers)*, *33*, 61–87.

ICCO. (2018). *ICCO (International Cocoa Organisation): Quarterly bulletin of cocoa statistics—Google Scholar*.

https://scholar.google.com/scholar_lookup?title=Quarterly%20Bulletin%20of%20Cocoa%20Statistics&publication_year=2018&author=ICCO

Isaac, J. C. (1987). *Power and Marxist theory: A realist view*. Cornell University Press Ithaca, NY.

Jackson, G., & Apostolakou, A. (2010). Corporate Social Responsibility in Western Europe: An Institutional Mirror or Substitute? *Journal of Business Ethics*, *94*(3), 371–394. https://doi.org/10.1007/s10551-009-0269-8

Jaffee, D. (2007). *Brewing justice: Fair trade coffee, sustainability, and survival*. Univ of California Press.

Jaffee, S. (2003). *From challenge to opportunity: Transforming Kenya's fresh vegetable trade in the context of emerging food safety and other standards in Europe*. The World Bank.

Jeffrey, C. (2001). 'A fist is stronger than five fingers': Caste and dominance in rural north India. *Transactions of the Institute of British Geographers*, *26*(2), 217–236. https://doi.org/10.1111/1475-5661.00016

Jeffrey, C., & Lerche, J. (2000). Stating the Difference: State, Discourse and Class Reproduction in Uttar Pradesh, India. *Development and Change*, *31*(4), 857–878. https://doi.org/10.1111/1467-7660.00180

Jeppesen, S., & Hansen, M. W. (2004). Environmental upgrading of Third World enterprises through linkages to transnational corporations. Theoretical perspectives and preliminary evidence. *Business Strategy and the Environment*, *13*(4), 261–274. https://doi.org/10.1002/bse.410

Jessop, B. (1997). The governance of complexity and the complexity of governance: Preliminary remarks on some problems and limits of economic guidance. *Beyond Market and Hierarchy: Interactive Governance and Social Complexity*, 95–128.

Jessop, B. (1998). The rise of governance and the risks of failure: The case of economic development. *International Social Science Journal*, *50*(155), 29–45. https://doi.org/10.1111/1468-2451.00107

Jha, M., & Bassompierre, L. de. (2020). More Effort Needed to Curb Child Labor in Cocoa, ICI Says. *Bloomberg.Com*. https://www.bloomberg.com/news/articles/2020-09-03/more-effort-needed-to-curb-child-labor-in-west-africa-ici-says

Johnsen, K. I., & Benjaminsen, T. A. (2017). The art of governing and everyday resistance: "Rationalization" of Sámi reindeer husbandry in Norway since the 1970s. *Acta Borealia*, *34*(1), 1–25. https://doi.org/10.1080/08003831.2017.1317981

Kaplinsky, R. (2000). Globalisation and unequalisation: What can be learned from value chain analysis? *Journal of Development Studies*, *37*(2), 117–146.

Karanth, K. K., & DeFries, R. (2010). Special Issue: Conservation and management in human-dominated landscapes: case studies from India. *Biological Conservation*, *143*(12), 2865–2964. https://www.cabdirect.org/cabdirect/abstract/20103371208

Kelly, A. B. (2011). Conservation practice as primitive accumulation. *The Journal of Peasant Studies*, *38*(4), 683–701. https://doi.org/10.1080/03066150.2011.607695

Kemp, R. (1994). Technology and the transition to environmental sustainability: The problem of technological regime shifts. *Futures*, *26*(10), 1023–1046. https://doi.org/10.1016/0016-3287(94)90071-X

Kirst, S. (2020). "Chiefs do not talk law, most of them talk power." Traditional authorities in conflicts over land grabbing in Ghana*. *Canadian Journal of African Studies / Revue Canadienne Des Études Africaines*, *54*(3), 519–539. https://doi.org/10.1080/00083968.2020.1719170

Kitchin, R., & Tate, N. (2013). *Conducting Research in Human Geography: Theory, methodology and practice*. Routledge. https://doi.org/10.4324/9781315841458

Kneen, B. (2002). *Invisible Giant: Cargill and Its Transnational Strategies*. Pluto Press.

Kolavalli, S., & Vigneri, M. (2011). Cocoa in Ghana: Shaping the success of an economy. *Yes, Africa Can: Success Stories from a Dynamic Continent*, 201–218.

Krauss, J. E. (2015). *Cocoa sustainability initiatives and the environment: Mapping stakeholder priorities and representations*. The University of Manchester, Manchester, UK.

Krauss, J. E., & Barrientos, S. (2021). Fairtrade and beyond: Shifting dynamics in cocoa sustainability production networks. *Geoforum*, *120*, 186–197. https://doi.org/10.1016/j.geoforum.2021.02.002

Krauss, J., & Krishnan, A. (2016). *Global Decisions and Local Realities: Priorities and Producers' Upgrading Opportunities in Agricultural Global Production Networks* (SSRN Scholarly Paper ID 3236108). Social Science Research Network. https://papers.ssrn.com/abstract=3236108

Kroeger, A., Bakhtary, H., Haupt, F., & Streck, C. (2017). *Eliminating Deforestation from the Cocoa Supply Chain*. World Bank. https://doi.org/10.1596/26549

Kull, C. A., Arnauld de Sartre, X., & Castro-Larrañaga, M. (2015). The political ecology of ecosystem services. *Geoforum*, *61*, 122–134. https://doi.org/10.1016/j.geoforum.2015.03.004

Kwaw-Nimeson, E., & Tian, Z. (2019). Impact Assessment of the Cocoa Rehabilitation Project on Cocoa Exports in Ghana. *Open Journal of Social Sciences*, *7*(9), 207–219.

Laary, D. (2015). *Ghana gives incentives to cocoa farmers to boost yields*. The Africa Report.Com. https://www.theafricareport.com/3281/ghana-gives-incentives-to-cocoa-farmers-to-boost-yields/

Lacher, H. (1999). The politics of the market: Re-reading Karl Polanyi. *Global Society*, *13*(3), 313–326. https://doi.org/10.1080/13600829908443193

Lambin, E. F., Gibbs, H. K., Heilmayr, R., Carlson, K. M., Fleck, L. C., Garrett, R. D., le Polain de Waroux, Y., McDermott, C. L., McLaughlin, D., Newton, P., Nolte, C.,

Pacheco, P., Rausch, L. L., Streck, C., Thorlakson, T., & Walker, N. F. (2018). The role of supply-chain initiatives in reducing deforestation. *Nature Climate Change*, *8*(2), 109–116. https://doi.org/10.1038/s41558-017-0061-1

Lambin, E. F., & Thorlakson, T. (2018). Sustainability Standards: Interactions Between Private Actors, Civil Society, and Governments. *Annual Review of Environment and Resources*, *43*(1), 369–393. https://doi.org/10.1146/annurev-environ-102017-025931

Lambin, E. F., Turner, B. L., Geist, H. J., Agbola, S. B., Angelsen, A., Bruce, J. W., Coomes, O. T., Dirzo, R., Fischer, G., & Folke, C. (2001). The causes of land-use and land-cover change: Moving beyond the myths. *Global Environmental Change*, *11*(4), 261–269.

Laven, A. (2011). The Ghanaian state and inclusive upgrading in the global cocoa chain. In *Value chains, social inclusion and economic development: Contrasting theories and realities* (pp. 121-147.). Routledge.

Laven, A., & Boomsma, M. (2012). Incentives for sustainable cocoa production in Ghana. *Royal Tropical Institute, Amsterdam*, *49*.

Lawhon, M., & Murphy, J. T. (2012). Socio-technical regimes and sustainability transitions: Insights from political ecology. *Progress in Human Geography*, *36*(3), 354–378. https://doi.org/10.1177/0309132511427960

le Polain de Waroux, Y., Garrett, R. D., Chapman, M., Friis, C., Hoelle, J., Hodel, L., Hopping, K., & Zaehringer, J. G. (2021). The role of culture in land system

science. *Journal of Land Use Science*, *0*(0), 1–17. https://doi.org/10.1080/1747423X.2021.1950229

Leach, M. (2008). Pathways to Sustainability in the Forest? Misunderstood Dynamics and the Negotiation of Knowledge, Power, and Policy. *Environment and Planning A: Economy and Space*, *40*(8), 1783–1795. https://doi.org/10.1068/a40215

Leach, M., & Fairhead, J. (2000). Fashioned Forest Pasts, Occluded Histories? International Environmental Analysis in West African Locales. *Development and Change*, *31*(1), 35–59. https://doi.org/10.1111/1467-7660.00146

Leach, M., & Mearns, R. (1996). *The Lie of the Land: Challenging Received Wisdom on the African Environment*. International African Institute.

Leach, M., Mearns, R., & Scoones, I. (1999). Environmental Entitlements: Dynamics and Institutions in Community-Based Natural Resource Management. *World Development*, *27*(2), 225–247. https://doi.org/10.1016/S0305-750X(98)00141-7

LeBaron, G., & Gore, E. (2020). Gender and Forced Labour: Understanding the Links in Global Cocoa Supply Chains. *The Journal of Development Studies*, *56*(6), 1095–1117. https://doi.org/10.1080/00220388.2019.1657570

Lee, J., Gereffi, G., & Beauvais, J. (2012). Global value chains and agrifood standards: Challenges and possibilities for smallholders in developing countries. *Proceedings of the National Academy of Sciences*, *109*(31), 12326–12331. https://doi.org/10.1073/pnas.0913714108

Li, T. M. (2007). *The will to improve: Governmentality, development, and the practice of politics*. Duke University Press.

Li, T. M. (2010). To Make Live or Let Die? Rural Dispossession and the Protection of Surplus Populations. *Antipode*, *41*(s1), 66–93. https://doi.org/10.1111/j.1467-8330.2009.00717.x

Li, T. M. (2014). *Land's end: Capitalist relations on an indigenous frontier*. Duke University Press.

Limb, M., & Dwyer, C. (2001). *Qualitative methodologies for geographers: Issues and debates*. Oxford University Press.

Loconto, A., & Busch, L. (2010). Standards, techno-economic networks, and playing fields: Performing the global market economy. *Review of International Political Economy*, *17*(3), 507–536. https://doi.org/10.1080/09692290903319870

Logan, W. E. M. (1947). TIMBER EXPLOITATION IN THE GOLD COAST. *Empire Forestry Review*, *26*(1), 30–53. https://www.jstor.org/stable/42601423

Lohmann, L. (1996). Freedom to plant: Indonesia and Thailand in a globalizing pulp and paper industry. *Environmental Change in South-East Asia. People, Politics and Sustainable Development, Routledge, London and New York*.

Long, N. (1990). From Paradigm Lost to Paradigm Regained? The Case for an Actor-oriented Sociology of Development. *Revista Europea de Estudios Latinoamericanos y Del Caribe / European Review of Latin American and Caribbean Studies*, *49*, 3–24. https://www.jstor.org/stable/25675467

Long, N. (2001). *Development Sociology: Actor Perspectives*. Routledge.

Löwe, A. (2017). *Creating opportunities for young people in Ghana's cocoa sector*. 39.

Lukes, S. (1974). *Power: A Radical View*. Macmillan Press.

Lukes, S. (2005). *Power, Second Edition: A Radical View*. Palgrave Macmillan.

Lund, C. (2014). Of What is This a Case?: Analytical Movements in Qualitative Social Science Research. *Human Organization*, *73*(3), 224–234. https://www.jstor.org/stable/44148783

Macpherson, C. B. (1978). *Property, Mainstream and Critical Positions*. University of Toronto Press.

Maginnis, S., & Sayer, J. A. (2005). *Forests in Landscapes: Ecosystem Approaches to Sustainability*. Routledge.

Mahrizal, Nalley, L. L., Dixon, B. L., & Popp, J. S. (2014). An optimal phased replanting approach for cocoa trees with application to Ghana. *Agricultural Economics*, *45*(3), 291–302. https://doi.org/10.1111/agec.12065

Malm, A. (2018). *The progress of this storm: Nature and society in a warming world*. Verso books.

Mann, M. (1986). *The Sources of Social Power: Volume 1, A History of Power from the Beginning to AD 1760*. Cambridge University Press.

Marchi, V. D., Maria, E. D., Krishnan, A., & Ponte, S. (2019). Environmental upgrading in global value chains. *Handbook on Global Value Chains*.

https://www.elgaronline.com/view/edcoll/9781788113762/9781788113762.00027.xml

Marchi, V. D., Maria, E. D., & Micelli, S. (2013). Environmental Strategies, Upgrading and Competitive Advantage in Global Value Chains. *Business Strategy and the Environment*, *22*(1), 62–72. https://doi.org/10.1002/bse.1738

Mariki, S., Svarstad, H., & Benjaminsen, T. (2015). Elephants over the Cliff: Explaining Wildlife Killings in Tanzania. *Land Use Policy*, *44*, 19–30. https://doi.org/10.1016/j.landusepol.2014.10.018

Markard, J., & Truffer, B. (2008). Technological innovation systems and the multi-level perspective: Towards an integrated framework. *Research Policy*, *37*(4), 596–615. https://doi.org/10.1016/j.respol.2008.01.004

Mathiesen, T. (2005). *Silently Silenced: Essays on the Creation of Acquiescence in Modern Society*. Waterside Press.

Mbembe, A. (1992). Provisional Notes on the Postcolony. *Africa: Journal of the International African Institute*, *62*(1), 3–37. https://doi.org/10.2307/1160062

McCusker, B., & Carr, E. R. (2006). The co-production of livelihoods and land use change: Case studies from South Africa and Ghana. *Geoforum*, *37*(5), 790–804.

Meemken, E.-M. (2020). Do smallholder farmers benefit from sustainability standards? A systematic review and meta-analysis. *Global Food Security*, *26*, 100373. https://doi.org/10.1016/j.gfs.2020.100373

Meemken, E.-M., & Qaim, M. (2018). Can private food standards promote gender equality in the small farm sector? *Journal of Rural Studies*, *58*, 39–51. https://doi.org/10.1016/j.jrurstud.2017.12.030

Meemken, E.-M., Sellare, J., Kouame, C. N., & Qaim, M. (2019). Effects of Fairtrade on the livelihoods of poor rural workers. *Nature Sustainability*, *2*(7), 635–642. https://doi.org/10.1038/s41893-019-0311-5

Melanie DuPuis, E., Goodman, D., & Harrison, J. (2006). Just Values or Just Value? Remaking the Local in Agro-Food Studies. In T. Marsden & J. Jonathan Murdoch† (Eds.), *Between the Local and the Global* (Vol. 12, pp. 241–268). Emerald Group Publishing Limited. https://doi.org/10.1016/S1057-1922(06)12010-7

Mendenhall, C. D., Sekercioglu, C. H., Brenes, F. O., Ehrlich, P. R., & Daily, G. C. (2011). Predictive model for sustaining biodiversity in tropical countryside. *Proceedings of the National Academy of Sciences*, *108*(39), 16313–16316. https://doi.org/10.1073/pnas.1111687108

Mieu, B. (2020). *Ghana and Côte d'Ivoire taste success in raising price of cocoa*. The Africa Report.Com. https://www.theafricareport.com/40945/ghana-and-cote-divoire-taste-success-in-raising-price-of-cocoa/

Milford, A. (2004). *Coffee, co-operatives and competition: The impact of fair trade*. CMI.

Mingay, G. E. (2014). *Parliamentary Enclosure in England: An Introduction to its Causes, Incidence and Impact, 1750-1850*. Routledge.

Minichiello, V., Aroni, R., & Hays, T. N. (2008). *In-depth Interviewing: Principles, Techniques, Analysis*. Pearson Education Australia. https://rune.une.edu.au/web/handle/1959.11/2448

Mollett, S., & Kepe, T. (2018). *Land rights, biodiversity conservation and justice: Rethinking parks and people*. Routledge.

Mollinga, P. (2011). The New Peasantries. Struggles for Autonomy and Sustainability in an Era of Empire and Globalization – By Jan Douwe van der Ploeg. *Journal of Agrarian Change*, *11*(4), 612–616. https://doi.org/10.1111/j.1471-0366.2011.00323.x

Mondelex International. (2021). *Cocoa Life CF1 progress report towards climate resilient cocoa communities*.

Moore, J. W. (2000). Sugar and the Expansion of the Early Modern World-Economy: Commodity Frontiers, Ecological Transformation, and Industrialization. *Review (Fernand Braudel Center)*, *23*(3), 409–433. JSTOR. https://www.jstor.org/stable/40241510

Mortimer, R. (1984). *Stubborn Survivors: Dissenting Essays on Peasants and Third World Development*. Centre of Southeast Asian Studies, Monash University.

Munshi, N., & Terazono, E. (2020). *Africa's cocoa farmers and Big Chocolate clash over poverty fighting measures*. https://www.ft.com/content/c7f1268d-b18a-4dc8-a40e-494bebd0d132

Murray, D. L., Raynolds, L. T., & Taylor, P. L. (2003). *One cup at a time: Poverty alleviation and fair trade coffee in Latin America*. Fair Trade Research Group, Colorado State University.

Mutersbaugh, T. (2002). The Number is the Beast: A Political Economy of Organic-Coffee Certification and Producer Unionism. *Environment and Planning A: Economy and Space*, *34*(7), 1165–1184. https://doi.org/10.1068/a3435

Mutersbaugh, T. (2005). Just-in-space: Certified rural products, labor of quality, and regulatory spaces. *Journal of Rural Studies*, *21*(4), 389–402. https://doi.org/10.1016/j.jrurstud.2005.08.003

Mutersbaugh, T. (2009). Brewing Justice: Fair Trade Coffee, Sustainability, and Survival – By Daniel Jaffee. *Economic Geography*, *85*(2), 241–242. https://doi.org/10.1111/j.1944-8287.2008.01026.x

Mva, J. M., & Lescornec, G. (2018). *Cocoa and the Global Goals: Eliminating Deforestation (SDG15) | World Cocoa Foundation*. http://www.worldcocoafoundation.org/cocoa-and-the-global-goals-eliminating-deforestation/

Myers, A. (2019). *Ghana Cocobod chief says cocoa not to blame for deforestation*. Confectionerynews.Com. https://www.confectionerynews.com/Article/2019/05/03/Ghana-Cocobod-chief-says-cocoa-not-to-blame-for-deforestation

Myers, A. (2020). *Fairtrade Fortnight launches with fresh report on exploitation experienced by women cocoa farmers*. Confectionerynews.Com.

https://www.confectionerynews.com/Article/2020/02/24/Fairtrade-Fortnight-launches-with-fresh-report-on-exploitation-experienced-by-women-cocoa-farmers

Myers, A. (2021a). *Ghana and Cote d'Ivoire launch new threats to cocoa companies over LID payments*. Www.Confectionerynews.Com. https://www.confectionerynews.com/Article/2021/06/24/Ghana-and-Cote-d-Ivoire-launch-new-threats-to-cocoa-companies-over-LID-payments

Myers, A. (2021b). *Mars Wrigley to meet industry cocoa officials to discuss LID payments*. Confectionerynews.Com. https://www.confectionerynews.com/Article/2021/05/05/Mars-Wrigley-to-meet-industry-cocoa-officials-to-discuss-LID-payments

Myers, A. (2021c). *Mondelēz plants more than 2.2m non-cocoa trees to help restore ecosystems on cocoa farms*. Confectionerynews.Com. https://www.confectionerynews.com/Article/2021/04/29/Mondelez-plants-more-than-2.2m-non-cocoa-trees-to-help-restore-ecosystems-on-cocoa-farms-LISTEN

Myers, R., & Hansen, C. P. (2020). Revisiting A Theory of Access: A review. *Society & Natural Resources*, *33*(2), 146–166. https://doi.org/10.1080/08941920.2018.1560522

Neilson, J., & Pritchard, B. (2011). *Value Chain Struggles: Institutions and Governance in the Plantation Districts of South India*. John Wiley & Sons.

Neimark, B. (2018). A New Sustainability Model for Measuring Changes in Power and Access in Global Commodity Chains. *Palgrave Communications*.

Neimark, B., Mahanty, S., & Dressler, W. (2016). Mapping Value in a 'Green' Commodity Frontier: Revisiting Commodity Chain Analysis. *Development and Change*, *47*(2), 240–265. https://doi.org/10.1111/dech.12226

Neimark, B., Osterhoudt, S., Alter, H., & Gradinar, A. (2019). A new sustainability model for measuring changes in power and access in global commodity chains: Through a smallholder lens. *Palgrave Communications*, *5*(1), 1–11. https://doi.org/10.1057/s41599-018-0199-0

Neimark, B., Osterhoudt, S., Blum, L., & Healy, T. (2019). Mob justice and 'The civilized commodity'. *The Journal of Peasant Studies*, *0*(0), 1–20. https://doi.org/10.1080/03066150.2019.1680543

Nelson, V., & Phillips, D. (2018). Sector, Landscape or Rural Transformations? Exploring the Limits and Potential of Agricultural Sustainability Initiatives through a Cocoa Case Study. *Business Strategy and the Environment*, *27*(2), 252–262. https://doi.org/10.1002/bse.2014

Nestle. (2020). *Tackling Deforestation: Progress report 2020*. https://www.nestlecocoaplan.com/themes/custom/cocoa/dist/assets/documents/Nestle_CFI_Tackling_Deforestation_Progress_Report_2020.pdf

Netting, R. M. (1993). *Smallholders, Householders: Farm Families and the Ecology of Intensive, Sustainable Agriculture*. Stanford University Press.

Newton, P., Agrawal, A., & Wollenberg, L. (2013). Enhancing the sustainability of commodity supply chains in tropical forest and agricultural landscapes. *Global Environmental Change*, *23*(6), 1761–1772. https://doi.org/10.1016/j.gloenvcha.2013.08.004

Nieburg, O. (2019). *What do farmers and the ICCO think of Ghana and Côte d'Ivoire's minimum cocoa price?* Confectionerynews.Com. https://www.confectionerynews.com/Article/2019/06/19/Cocoa-farmers-question-Ghana-and-Cote-d-Ivoire-s-minimum-cocoa-price

Niether, W., Jacobi, J., Blaser, W. J., Andres, C., & Armengot, L. (2020). Cocoa agroforestry systems versus monocultures: A multi-dimensional meta-analysis. *Environmental Research Letters*, *15*(10), 104085. https://doi.org/10.1088/1748-9326/abb053

Obiri, B. D., Bright, G. A., McDonald, M. A., Anglaaere, L. C. N., & Cobbina, J. (2007a). Financial analysis of shaded cocoa in Ghana. *Agroforestry Systems*, *71*(2), 139–149. https://doi.org/10.1007/s10457-007-9058-5

Obiri, B. D., Bright, G. A., McDonald, M. A., Anglaaere, L. C. N., & Cobbina, J. (2007b). Financial analysis of shaded cocoa in Ghana. *Agroforestry Systems*, *71*(2), 139–149. https://doi.org/10.1007/s10457-007-9058-5

Odijie, M. E. (2018). Sustainability winners and losers in business-biased cocoa sustainability programmes in West Africa. *International Journal of Agricultural Sustainability*, *16*(2), 214–227. https://doi.org/10.1080/14735903.2018.1445408

Oppong, F. Kofi. (2015). Ghana's Efforts at Sustaining Cocoa Production. *Presentation given at the Cocoa Market Outlook Conference Held by the International Cocoa Organisation*.

Otto, J., & Mutersbaugh, T. (2015). Certified political ecology. *Routledge Handbook of Political Ecology. Abingdon, Oxon*, 418–429.

Owubah, C. E., Donkor, N. T., & Nsenkyire, R. D. (2000). Forest Reserve encroachment: The case of Tano-Ehuro forest reserve in Western Ghana. *The International Forestry Review*, *2*(2), 105–111. https://www.jstor.org/stable/42610113

Padi, F. K., Ofori, A., & Akpertey, A. (2017). Genetic base-broadening of cacao for precocity and cropping efficiency. *Plant Genetic Resources*, *15*(6), 548–557. https://doi.org/10.1017/S1479262116000277

Padi, F. K., Ofori, A., & Arthur, A. (2017). Genetic variation and combining abilities for vigour and yield in a recurrent selection programme for cacao. *The Journal of Agricultural Science*, *155*(3), 444–464. https://doi.org/10.1017/S0021859616000459

Parren, M. P., & De Graaf, N. R. (2005). The quest for natural forest management in Ghana. _ the Netherlands: Tropenbos Foundation, 2005. _ 199 p. _ (Tropenbos Series; 13) Jabaji-Hare, SH and WB Kendrick. Effects of pesticide on root exudation and on composition of extracts of mycorrhizal and nonmicorrhizal leek roots. *Can. J. Plant Pathol*, *27*, 18–26.

Patton, M. Q. (1990). *Qualitative evaluation and research methods*. SAGE Publications, inc.

Patton, M. Q. (2014). *Qualitative research & evaluation methods: Integrating theory and practice*. Sage publications.

Peet, R., & Watts, M. (2004). *Liberation ecologies: Environment, development and social movements*. Routledge.

Peluso, N. L., & Ribot, J. (2020). Postscript: A Theory of Access Revisited. *Society & Natural Resources*, *33*(2), 300–306. https://doi.org/10.1080/08941920.2019.1709929

Perreault, T., Bridge, G., & McCarthy, J. (2015). *The Routledge handbook of political ecology*. Routledge.

Phillips, N. (2017). Power and inequality in the global political economy. *International Affairs*, *93*(2), 429–444. https://doi.org/10.1093/ia/iix019

Phillips, A., 1989. The enigma of colonialism: British policy in West Africa. Currey.

Pieterse, E. (2010). Cityness and African Urban Development. *Urban Forum*, *21*(3), 205–219. https://doi.org/10.1007/s12132-010-9092-7

Polanyi, K. (1944). *The great transformation: The political and economic origins of our times*. Beacon Press.

Polanyi, K. (1957). The economy as instituted process: Trade and market in the early empires. *Trade and Market in the Early Empires: Economies in History and*

Theory; Edited by Karl Polanyi, Conrad M. Arensberg, and Harry W. Pearson, 243–270.

Ponte, S. (2008a). Greener than Thou: The Political Economy of Fish Ecolabeling and Its Local Manifestations in South Africa. *World Development*, *36*(1), 159–175. https://doi.org/10.1016/j.worlddev.2007.02.014

Ponte, S. (2008b). *Developing a Vertical Dimension to Chronic Poverty Research: Some Lessons from Global Value Chain Analysis* (SSRN Scholarly Paper ID 1538946). Social Science Research Network. https://doi.org/10.2139/ssrn.1538946

Ponte, S. (2012). The Marine Stewardship Council (MSC) and the Making of a Market for 'Sustainable Fish'. *Journal of Agrarian Change*, *12*(2–3), 300–315. https://doi.org/10.1111/j.1471-0366.2011.00345.x

Ponte, S. (2019a). *Business, power and sustainability in a world of global value chains*. Zed Books Ltd.

Ponte, S. (2019b). Sustainability, global value chains and green capital accumulation. *Handbook on Global Value Chains*. https://www.elgaronline.com/abstract/edcoll/9781788113762/9781788113762.00020.xml

Ponte, S. (2020a). Green Capital Accumulation: Business and Sustainability Management in a World of Global Value Chains. *New Political Economy*, *25*(1), 72–84. https://doi.org/10.1080/13563467.2019.1581152

Ponte, S. (2020b). The hidden costs of environmental upgrading in global value chains. *Review of International Political Economy*, *0*(0), 1–26. https://doi.org/10.1080/09692290.2020.1816199

Ponte, S., & Gibbon, P. (2005). Quality standards, conventions and the governance of global value chains. *Economy and Society*, *34*(1), 1–31. https://doi.org/10.1080/0308514042000329315

Ponte, S., Gibbon, P., & Vestergaard, J. (2011). *Governing through standards: Origins, drivers and limitations*. Palgrave Macmillan. https://forskning.ruc.dk/en/publications/governing-through-standards-origins-drivers-and-limitations

Ponte, S., & Sturgeon, T. (2014). Explaining governance in global value chains: A modular theory-building effort. *Review of International Political Economy*, *21*(1), 195–223.

Ramankutty, N., & Foley, J. A. (1999). Estimating historical changes in global land cover: Croplands from 1700 to 1992. *Global Biogeochemical Cycles*, *13*(4), 997–1027. https://doi.org/10.1029/1999GB900046

Rangan, H. (1997). Property vs. Control: The State and Forest Management in the Indian Himalaya. *Development and Change*, *28*(1), 71–94. https://doi.org/10.1111/1467-7660.00035

Rangan, H., & Kull, C. A. (2009). What makes ecology `political'?: Rethinking `scale' in political ecology. *Progress in Human Geography*, *33*(1), 28–45. https://doi.org/10.1177/0309132508090215

Rawls, J. (1999). *A theory of justice*. Harvard university press.

Raynolds, L. T. (2000). Re-embedding global agriculture: The international organic and fair trade movements. *Agriculture and Human Values*, *17*(3), 297–309. https://doi.org/10.1023/A:1007608805843

Raynolds, L. T. (2009). Mainstreaming Fair Trade Coffee: From Partnership to Traceability. *World Development*, *37*(6), 1083–1093. https://doi.org/10.1016/j.worlddev.2008.10.001

Raynolds, L. T., Murray, D., & Heller, A. (2007). Regulating sustainability in the coffee sector: A comparative analysis of third-party environmental and social certification initiatives. *Agriculture and Human Values*, *24*(2), 147–163. https://doi.org/10.1007/s10460-006-9047-8

Raynolds, L. T., Murray, D., & Wilkinson, J. (2007). *Fair trade: The challenges of transforming globalization*. Routledge.

Ribot, J. (1998). Theorizing Access: Forest Profits along Senegal's Charcoal Commodity Chain. *Development and Change*, *29*(2), 307–341. https://doi.org/10.1111/1467-7660.00080

Ribot, J. C., & Peluso, N. L. (2003a). A Theory of Access*. *Rural Sociology*, *68*(2), 153–181. https://doi.org/10.1111/j.1549-0831.2003.tb00133.x

Ribot, J. C., & Peluso, N. L. (2003b). A theory of access. *Rural Sociology*, *68*(2), 153–181.

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.

Richards, P., 1983. Ecological change and the politics of African land use. African Studies Review 26, 1–72.

Richards, P., 1983. Farming systems and agrarian change in West Africa. Progress in Geography 7, 1–39.

Robbins, P. (2004). *Political Ecology: A Critical Introduction*. Wiley Blackwell.

Robbins, P. (2012). *Political Ecology: A Critical Introduction* (Vol. 20). John Wiley & Sons.

Robbins, P., & Bishop, K. M. (2008). There and back again: Epiphany, disillusionment, and rediscovery in political ecology. *Geoforum*, *39*(2), 747–755. https://doi.org/10.1016/j.geoforum.2006.12.013

Robbins, P., Chhatre, A., & Karanth, K. (2015). Political Ecology of Commodity Agroforests and Tropical Biodiversity. *Conservation Letters*, *8*(2), 77–85. https://doi.org/10.1111/conl.12169

Robbins, P., Tripuraneni, V., Karanth, K. K., & Chhatre, A. (2020). Coffee, Trees, and Labor: Political Economy of Biodiversity in Commodity Agroforests. *Annals of the American Association of Geographers*, *0*(0), 1–16. https://doi.org/10.1080/24694452.2020.1803726

Robertson, A. F. (1982). Abusa: The structural history of an economic contract. *The Journal of Development Studies*, *18*(4), 447–478. https://doi.org/10.1080/00220388208421840

Rocheleau, D. E. (1995). Gender and Biodiversity: A Feminist Political Ecology Perspective. *IDS Bulletin*, *26*(1), 9–16. https://doi.org/10.1111/j.1759-5436.1995.mp26001002.x

Rocheleau, D. E. (2008). Political ecology in the key of policy: From chains of explanation to webs of relation. *Geoforum*, *39*(2), 716–727. https://doi.org/10.1016/j.geoforum.2007.02.005

Rocheleau, D., & Edmunds, D. (1997). Women, men and trees: Gender, power and property in forest and agrarian landscapes. *World Development*, *25*(8), 1351–1371.

Rocheleau, D., & Ross, L. (1995). Trees as Tools, Trees as Text: Struggles Over Resources in Zambrana-Chacuey, Dominican Republic. *Antipode*, *27*(4), 407–428. https://doi.org/10.1111/j.1467-8330.1995.tb00287.x

Rocheleau, D., & Roth, R. (2007). Rooted networks, relational webs and powers of connection: Rethinking human and political ecologies. *Geoforum*, *38*(3), 433–438.

Rocheleau, D., Weber, F., & Field-Juma, A. (1988). *Agroforestry in dryland Africa*.

Ronchi, L. (2002). The impact of Fair Trade on producers and their organizations: A case study with Coocafé in Costa Rica. *Policy Research Unit. Sussex: University of Sussex*.

Ruben, R., & Fort, R. (2012). The Impact of Fair Trade Certification for Coffee Farmers in Peru. *World Development*, *40*(3), 570–582. https://doi.org/10.1016/j.worlddev.2011.07.030

Ruf, F. O. (2011). The Myth of Complex Cocoa Agroforests: The Case of Ghana. *Human Ecology*, *39*(3), 373. https://doi.org/10.1007/s10745-011-9392-0

Ruf, F., & Siswoputranto, P. S. (1995). *Cocoa Cycles: The Economics of Cocoa Supply*. Woodhead Publishing.

Said, E. W. (1978). *Orientalism*. Pantheon Books.

Salazar, C. (1996). A sentimental economy: Commodity and community in rural Ireland. *A Sentimental Economy: Commodity and Community in Rural Ireland*. https://www.cabdirect.org/cabdirect/abstract/19961806751

Sarbah, J. M. (1904). *Fanti customary laws: A brief introduction to the principles of the native laws and customs of the Fanti and Akan districts of the Gold Coast*. W. Clowes and Sons, limited.

Sayid, R. (2020, February 24). *Exploited female cocoa farm workers are paid just 23p a day*. Mirror. https://www.mirror.co.uk/news/world-news/exploited-female-cocoa-farm-workers-21569248

Schneider, A. (2014). Embracing ambiguity – lessons from the study of corporate social responsibility throughout the rise and decline of the modern welfare state. *Business Ethics: A European Review*, *23*(3), 293–308. https://doi.org/10.1111/beer.12052

Schroeder, R. A. (1997). “Re-claiming” Land in The Gambia: Gendered Property Rights and Environmental Intervention. *Annals of the Association of American Geographers*, *87*(3), 487–508. https://doi.org/10.1111/1467-8306.00065

Schroeder, R. A. (1999). *Shady practices: Agroforestry and gender politics in the Gambia* (Vol. 5). Univ of California Press.

Schroth, G., & McNeely, J. A. (2011). Biodiversity Conservation, Ecosystem Services and Livelihoods in Tropical Landscapes: Towards a Common Agenda. *Environmental Management*, *48*(2), 229–236. https://doi.org/10.1007/s00267-011-9708-2

Scoones, I., Newell, P., & Leach, M. (2015). The politics of green transformations. In *The Politics of Green Transformations*. Routledge.

Scott, J. C. (1976). *The Moral Economy of the Peasant: Rebellion and Subsistence in Southeast Asia*. Yale University Press.

Scott, J. C. (1985). *Weapons of the weak: Everyday forms of peasant resistance*. yale university Press.

Seawright, J., & Gerring, J. (2008). Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options. *Political Research Quarterly*, *61*(2), 294–308. https://doi.org/10.1177/1065912907313077

Seini, W. (2002). Agricultural growth and competitiveness under policy reforms in Ghana: ISSER Technical Publication No. 61. *University of Ghana, Legon*.

Sellare, J., Meemken, E.-M., & Qaim, M. (2020). Fairtrade, Agrochemical Input Use, and Effects on Human Health and the Environment. *Ecological Economics*, *176*, 106718. https://doi.org/10.1016/j.ecolecon.2020.106718

Sibun, J. (2008). *Cadbury to protect Ghana's cocoa industry*. The Telegraph. https://www.telegraph.co.uk/finance/newsbysector/retailandconsumer/2783373/Cadbury-to-protect-Ghanas-cocoa-industry.html

Sikor, T., & Lund, C. (2009). Access and property: A question of power and authority. *Development and Change*, *40*(1), 1–22.

Sikor, T., & Lund, C. (2010). *The politics of possession: Property, authority, and access to natural resources*. John Wiley & Sons.

Slavin, T. (2020). *'Extreme poverty still fuelling deforestation from cocoa in West Africa' | Reuters Events | Sustainable Business*. https://www.reutersevents.com/sustainability/extreme-poverty-still-fuelling-deforestation-cocoa-west-africa

Snapir, B., Simms, D. M., & Waine, T. W. (2017). Mapping the expansion of galamsey gold mines in the cocoa growing area of Ghana using optical remote sensing. *International Journal of Applied Earth Observation and Geoinformation*, *58*, 225–233. https://doi.org/10.1016/j.jag.2017.02.009

Snider, A., Gutiérrez, I., Sibelet, N., & Faure, G. (2017). Small farmer cooperatives and voluntary coffee certifications: Rewarding progressive farmers of engendering widespread change in Costa Rica? *Food Policy*, *69*, 231–242. https://doi.org/10.1016/j.foodpol.2017.04.009

Stake, R. E. (1995). *The Art of Case Study Research*. SAGE.

Steinberg, M. K. (1998). Political Ecology and Cultural Change: Impacts on Swidden-fallow Agroforestry Practices among the Mopan Maya in Southern Belize. *The Professional Geographer*, *50*(4), 407–417. https://doi.org/10.1111/0033-0124.00129

Stott, P. A., & Sullivan, S. (2000). *Political Ecology: Science, Myth and Power*. Arnold.

Suchman, M. C. (1995). Managing Legitimacy: Strategic and Institutional Approaches. *Academy of Management Review*, *20*(3), 571–610. https://doi.org/10.5465/amr.1995.9508080331

Sullivan, S. (2013). Banking Nature? The Spectacular Financialisation of Environmental Conservation. *Antipode*, *45*(1), 198–217. https://doi.org/10.1111/j.1467-8330.2012.00989.x

Svarstad, H., Benjaminsen, T. A., & Overå, R. (2018a). Power theories in political ecology. *Journal of Political Ecology*, *25*(1), Article 1. https://doi.org/10.2458/v25i1.23044

Svarstad, H., Benjaminsen, T. A., & Overå, R. (2018b). Power theories in political ecology. *Journal of Political Ecology*, *25*(1), 350–363. https://doi.org/10.2458/v25i1.23044

Swinnen, J., Colen, L., & Maertens, M. (2010). *Constraints to smallholder participation in high-value agriculture in West-Africa*.

Takahashi, R., & Todo, Y. (2014). The impact of a shade coffee certification program on forest conservation using remote sensing and household data. *Environmental Impact Assessment Review*, *44*, 76–81. https://doi.org/10.1016/j.eiar.2013.10.002

Takane, T. (2001). *[Book review]" Shady Practices: Agroforestry and Gender Politics in The Gambia by Richard A. Schroeder"*.

Tayleur, C., Balmford, A., Buchanan, G. M., Butchart, S. H. M., Ducharme, H., Green, R. E., Milder, J. C., Sanderson, F. J., Thomas, D. H. L., Vickery, J., & Phalan, B. (2016). Global Coverage of Agricultural Sustainability Standards, and Their Role in Conserving Biodiversity. *Conservation Letters*, *10*(5), 610–618. https://doi.org/10.1111/conl.12314

Taylor, P. L. (2005). In the market but not of it: Fair trade coffee and forest stewardship council certification as market-based social change. *World Development*, *33*(1), 129–147.

Terazono, E., & Munshi, N. (2020, December 11). *West Africa vs Big Chocolate: Battle over price sours relations*. https://www.ft.com/content/288112d5-20b3-4afc-ac7a-f5c25e736c17

Thorlakson, T., Zegher, J. F. de, & Lambin, E. F. (2018). Companies' contribution to sustainability through global supply chains. *Proceedings of the National Academy of Sciences*, *115*(9), 2072–2077. https://doi.org/10.1073/pnas.1716695115

Ton, G., Hagelaars, G., Laven, A., & Vellema, S. (2008). Chain governance, sector policies and economic sustainability in cocoa: A comparative analysis of Ghana, Côte d'Ivoire, and Ecuador. *Markets, Chains and Sustainable Development Strategy & Policy Paper*, *12*.

Tschakert, P. (2009). Recognizing and nurturing artisanal mining as a viable livelihood. *Resources Policy*, *34*(1), 24–31. https://doi.org/10.1016/j.resourpol.2008.05.007

Tscharntke, T., Clough, Y., Bhagwat, S. A., Buchori, D., Faust, H., Hertel, D., Hölscher, D., Juhrbandt, J., Kessler, M., Perfecto, I., Scherber, C., Schroth, G., Veldkamp, E., & Wanger, T. C. (2011). Multifunctional shade-tree management in tropical agroforestry landscapes – a review. *Journal of Applied Ecology*, *48*(3), 619–629. https://doi.org/10.1111/j.1365-2664.2010.01939.x

Tudhope, W.T.D., 1909. The development of the cocoa industry in the Gold Coast and Ashanti. Journal of the Royal African Society 9, 34–45.

Tudhope, W.D.T., 1918. Enquiry into the Gold Coast Cocoa Industry. Interim Report, Gold Coast Sessional Paper No. II of 19, 6.

Turner, B. L., Lambin, E. F., & Reenberg, A. (2007). The emergence of land change science for global environmental change and sustainability. *Proceedings of the National Academy of Sciences*, *104*(52), 20666–20671.

Turner, B. L., & Robbins, P. (2008). Land-change science and political ecology: Similarities, differences, and implications for sustainability science. *Annual Review of Environment and Resources*, *33*, 295–316.

Ubink, J. M., Hoekema, A. J., & Assies, W. J. (Eds.). (2009). *Legalising Land Rights: Local Practices, State Responses and Tenure Security in Africa, Asia and Latin America*. Amsterdam University Press. https://doi.org/10.5117/9789087280567

Valkila, J. (2009). Fair Trade organic coffee production in Nicaragua—Sustainable development or a poverty trap? *Ecological Economics*, *68*(12), 3018–3025. https://doi.org/10.1016/j.ecolecon.2009.07.002

Valkila, J., & Nygren, A. (2010). Impacts of Fair Trade certification on coffee farmers, cooperatives, and laborers in Nicaragua. *Agriculture and Human Values*, *27*(3), 321–333. https://doi.org/10.1007/s10460-009-9208-7

van der Ploeg, J. D. (2009). *The new peasantries: Struggles for autonomy and sustainability in an era of empire and globalization*. Routledge.

van der Ploeg, J. D. (2013). *Peasants and the art of farming: A Chayanovian manifesto*. Fernwood Pub.

van der Ploeg, J. D. (2014). Peasant-driven agricultural growth and food sovereignty. *The Journal of Peasant Studies*, *41*(6), 999–1030. https://doi.org/10.1080/03066150.2013.876997

van der Ploeg, J. D. (2018). *The New Peasantries: Rural Development in Times of Globalization*. Routledge.

Vandergeest, P., & Peluso, N. L. (2015). *Political Forest in Bryant, Raymond L. (ed.) The international handbook of political ecology*. Edward Elgar Publishing.

Vanderhaegen, K., Akoyi, K. T., Dekoninck, W., Jocqué, R., Muys, B., Verbist, B., & Maertens, M. (2018). Do private coffee standards 'walk the talk' in improving socio-economic and environmental sustainability? *Global Environmental Change*, *51*, 1–9. https://doi.org/10.1016/j.gloenvcha.2018.04.014

Vayda, A. P. (1983). *Progressive contextualization: Methods for research in human ecology*. 17.

Veldkamp, A., & Lambin, E. F. (2001). Predicting land-use change. *Agriculture, Ecosystems & Environment*, *85*(1), 1–6. https://doi.org/10.1016/S0167-8809(01)00199-2

Vigneri, M. (2005). Trade liberalisation and agricultural performance: Micro and macro evidence on cash crop production in Sub-Saharan Africa. *Unpublished Doctorate's Thesis, University of Oxford, Oxford, United Kingdom*.

Wardell, Da. (2006). Collision, Collusion and Muted Resistance-Contrasting Early and Later Encounters with Empire Forestry in the Gold Coast, 1874-1957. *Collisions of Cultures and Identifies: Settlers and Indigenous Peoples*, 79.

Watts, M. J. (1983). *Silent Violence: Food, Famine, and Peasantry in Northern Nigeria*. University of California Press.

Wessel, M., & Quist-Wessel, P. M. F. (2015). Cocoa production in West Africa, a review and analysis of recent developments. *NJAS - Wageningen Journal of Life Sciences*, *74–75*, 1–7. https://doi.org/10.1016/j.njas.2015.09.001

Whitehead, A., & Tsikata, D. (2003). Policy Discourses on Women's Land Rights in Sub–Saharan Africa: The Implications of the Re–turn to the Customary.

Journal of Agrarian Change, *3*(1–2), 67–112. https://doi.org/10.1111/1471-0366.00051

Willer, H., Sampson, G., Voora, V., Dang, D., & Lernoud, J. (2019). *The State of Sustainable Markets 2019-Statistics and Emerging Trends*.

Willis, W. C., & Johnson, M. D. (2020). Political Ecology of Shade Coffee: Perspectives from Jamaican Blue Mountain Farmers. *Conservation & Society*, *18*(3), 280–292. https://www.jstor.org/stable/26937768

Wilson, L. E. (1990). The" Bloodless Conquest" in Southeastern Ghana: The Huza and Territorial Expansion of the Krobo in the 19th Century. *The International Journal of African Historical Studies*, *23*(2), 269–297.

Wisner, B. (2015). *Speaking truth to power. In: Perreault, T., G. Bridge, J. McCarthy (eds.): The Routledge handbook of political ecology*. Routledge.

Wood, G.A.R., & Lass, R.A. (1985). *Cocoa*. Wiley-Blackwell.

Yeung, H. W. (2005). Rethinking relational economic geography. *Transactions of the Institute of British Geographers*, *30*(1), 37–51. https://doi.org/10.1111/j.1475-5661.2005.00150.x

Yin, R. K. (2012). *Applications of case study research*. sage.

Appendix

Appendix 1

List of interviews

Interview number	Respondent	Interview date
# 1	An administrator of the Farmer cooperative (Goaso)	28/07/2018
# 2	Executive of Farmer cooperative (Goaso)	28/07/2018
# 3	Executive of Farmer cooperative (Goaso)	28/07/2018
# 4	Executive of Farmer cooperative (Goaso)	29/07/2018
# 5	Agronomic expert of the Farmer cooperative (Goaso)	28/07/2018
# 6	Official of CHED (Goaso)	29/07/2018
# 7	Farm owner (Asumura)	24/08/2018
# 8	Farm owner (Asumura)	24/08/2018
# 9	Farm owner (Asumura)	24/08/2018
# 10	Caretaker (Asumura)	25/08/2018
# 11	Caretaker (Asumura)	28/08/2018
# 12	Farm owner (Asumura)	25/08/2018
# 13	Farm owner (Twiapiase)	26/08/2018
# 14	Caretaker (Twiapiase)	26/08/2018
# 15	Farm owner (Twiapiase)	26/08/2018
Interview number	Respondent	Interview date
# 16	Caretaker (Twiapiase)	27/08/2018
# 17	Farm owner (Twiapiase)	27/08/2018
# 18	Farm owner (Twiapiase)	27/08/2018
# 19	Caretaker (Pomakrom)	27/08/2018

# 20	Farm owner (Pomakrom)	28/08/2018
# 21	Caretaker (Pomakrom)	28/08/2018
# 22	Caretaker (Pomakrom)	26/08/2018
# 23	Farm owner (Pomakrom)	28/08/2018
# 24	Farm owner (Pomakrom)	28/08/2018
# 25	Farm owner (Anyimaye)	28/08/2018
# 26	Farm owner (Anyimaye)	29/08/2018
# 27	Farm owner (Anyimaye)	29/08/2018
# 28	Caretaker (Anyimaye)	25/08/2018
# 29	Farm owner (Anyimaye)	29/08/2018
# 30	Farm owner (Anyimaye)	29/08/2018
Interview number	Respondent	Interview date
# 31	Official of SPD (Goaso)	31/07/2018
# 32	Caretaker (Awiwohu Manhyia)	24/10/2018
# 33	Caretaker (Awiwohu Manhyia)	24/10/2018
# 34	Farm owner (Awiwohu Manhyia)	04/11/2018
# 35	Farm owner (Awiwohu Manhyia)	26/10/2018
# 36	Caretaker (Awiwohu Manhyia)	28/10/2018
# 37	Farm owner (Awiwohu Manhyia)	05/11/2018
# 38	Farm owner (Kasapin)	12/08/2018
# 39	Farm owner (Kasapin)	13/08/2018
# 40	Caretaker (Kasapin)	14/08/2018
# 41	Farm owner (Kasapin)	13/08/2018
# 42	Caretaker (Kasapin)	15/08/2018
# 43	Farm owner (Kasapin)	17/08/2018
# 44	Farm owner (Abidjan)	16/08/2018

# 45	Caretaker (Abidjan)	16/08/2018
Interview number	Respondent	Interview date
# 46	Farm owner (Abidjan)	17/08/2018
# 47	Farm owner (Abidjan)	18/08/2018
# 48	Farm owner (Abidjan)	18/08/2018
# 49	Farm owner (Abidjan)	20/08/2018
# 50	Farm owner (Asanteman council)	22/08/2018
# 51	Caretaker (Asanteman council)	22/08/2018
# 52	Farm owner (Asanteman council)	21/08/2018
# 53	Farm owner (Asanteman council)	15/08/2018
# 54	Caretaker (Asanteman council)	14/08/2018
# 55	Farm owner (Asanteman council)	20/08/2018
# 56	Caretaker (Jerusalem)	21/09/2018
# 57	Farm owner (Jerusalem)	21/09/2018
# 58	Farm owner (Jerusalem)	24/09/2018
# 59	Farm owner (Jerusalem)	23/09/2018
# 60	Caretaker (Jerusalem)	25/09/2018
Interview number	Respondent	Interview date
# 61	Caretaker (Jerusalem)	26/09/2018
# 62	Caretaker (Peprakrom)	27/09/2018
# 63	Caretaker (Peprakrom)	27/09/2018
# 64	Caretaker (Peprakrom)	29/09/2018
# 65	Farm owner (Peprakrom)	30/09/2018
# 66	Caretaker (Peprakrom)	30/09/2018
# 67	Farm owner (Peprakrom)	26/09/2018
# 68	Agronomic expert of the Farmer cooperative (Goaso)	01/10/2018

# 69	Official of Forestry Commission (Goaso)	01/10/2018
# 70	Official of Forestry Commission (Goaso)	02/10/2018
# 71	Official of SPD (Goaso)	01/10/2018
# 72	Official of CHED (Goaso)	02/10/2018
# 73	An administrator of the Farmer cooperative (Goaso)	01/10/2018
# 74	Executive of Farmer cooperative (Goaso)	02/10/2018
# 75	Farm owner (Goaso)	
Interview number	Respondent	Interview date
# 76	Farm owner (Goaso)	20/09/2018
# 77	Farm owner (Goaso)	20/09/2018
# 78	Farm owner (Goaso)	16/10/2018
# 79	Farm owner (Goaso)	18/10/2018
# 80	Farm owner (Goaso)	17/10/2018
# 81	Farm owner (Goaso)	16/10/2018
# 82	Caretaker (Kumaho)	19/10/2018
# 83	Farm owner (Kumaho)	19/10/2018
# 84	Farm owner (Kumaho)	19/10/2018
# 85	Farm owner (Kumaho)	20/10/2018
# 86	Farm owner (Kumaho)	20/10/2018
# 87	Farm owner (Kumaho)	20/10/2018
# 88	Farm owner (Ayomso)	25/11/2018
# 89	Caretaker (Ayomso)	25/11/2018
# 90	Farm owner (Ayomso)	25/11/2018
Interview number	Respondent	Interview date
# 91	Farm owner (Ayomso)	26/11/2018
# 92	Farm owner (Ayomso)	27/11/2018

# 93	Caretaker (Ayomso)	25/11/2018
# 94	Caretaker (Dotom)	26/11/2018
# 95	Farm owner (Dotom)	26/11/2018
# 96	Farm owner (Dotom)	27/11/2018
# 97	Farm owner (Dotom)	27/11/2018
# 98	Farm owner (Dotom)	27/11/2018
# 99	Farm owner (Dotom)	27/11/2018
# 100	Farm owner (Fawohoyeden)	28/11/2018
# 101	Farm owner (Fawohoyeden)	28/11/2018
# 102	Farm owner (Fawohoyeden)	28/11/2018
# 103	Farm owner (Fawohoyeden)	28/11/2018
# 104	Farm owner (Fawohoyeden)	29/11/2018
# 105	Farm owner (Fawohoyeden)	29/11/2018
Interview number	Respondent	Interview date
# 106	Farm owner (Asumura)	25/08/2018
# 107	Farm owner (Asumura)	28/08/2018
# 108	Farm owner (Pomakrom)	28/08/2018
# 109	Caretaker (Anyimaye Manhyia)	02/10/2018
# 110	Farm owner (Pomakrom)	03/12/2018
# 111	Farm owner (Goaso)	03/12/2018
# 112	Farm owner (Dotom)	03/12/2019
# 113	Caretaker (Ayomso)	25/11/2018
# 114	Farm owner (Asanteman council)	21/08/2018
# 115	Farm owner (Peprakrom)	30/09/2018
# 116	Farm owner (Abidjan)	20/08/2018
# 117	Official of Forestry Commission (Goaso)	03/12/2018

# 118	Official of CHED (Goaso)	4/12/2018
# 119	Agronomic expert of the Farmer cooperative (Goaso)	4/12/2018
# 120	An administrator of the Farmer cooperative (Goaso)	4/12/2018
Interview number	Respondent	Interview date
# 122	Farm owner (Goaso)	18/07/2019
# 123	Farm owner (Goaso)	18/07/2019
# 124	Farm owner (Goaso)	26/07/2019
# 125	Farm owner (Goaso)	18/07/2019
# 126	Farm owner (Goaso)	25/07/2019
# 127	Caretaker (Goaso)	19/07/2019
# 128	Farm owner (Goaso)	19/07/2019
# 129	Farm owner (Goaso)	19/07/2019
# 130	Farm owner (Goaso)	19/07/2019
# 131	Farm owner (Goaso)	19/07/2019
# 132	Farm owner (Kasapin)	20/07/2019
# 133	Caretaker (Kasapin)	20/07/2019
# 134	Farm owner (Kasapin)	20/07/2019
# 135	Farm owner (Kasapin)	21/07/2019
# 136	Farm owner (Kasapin)	21/07/2019
Interview number	Respondent	Interview date
# 137	Farm owner (Kasapin)	22/07/2019
# 138	Farm owner (Kasapin)	21/07/2019
# 139	Farm owner (Kasapin)	23/07/2019
# 140	Farm owner (Kasapin)	22/07/2019
# 141	Farm owner (Kasapin)	23/07/2019

# 142	Farm owner (Asumura)	24/07/2019
# 143	Farm owner (Asumura)	24/07/2019
# 144	Caretaker (Asumura)	24/07/2019
# 145	Farm owner (Asumura)	24/07/2019
# 146	Farm owner (Asumura)	25/07/2019
# 147	Caretaker (Asumura)	25/07/2019
# 148	Farm owner (Asumura)	25/07/2019
# 149	Official of CRIG	25/07/2019
# 150	Cooperative worker (via telephone)	19/04/2020
# 151	Official of CHED (via telephone)	07/02/2021
# 152	Official of CRIG (via telephone)	18/03/2021
# 153	Official of SPD (via telephone)	13/04/2020
# 154	Official of CHED (via telephone)	22/10/2020
# 155	Agronomic expert of the cooperative society (via telephone)	20/05/2021
# 156	Cooperative worker (via telephone)	16/03/2020
# 157	Cooperative worker (via telephone)	12/12/2019

Appendix 2

Sample of interview schedule used for the semi-structured interviews

University of Lausanne
Institute of Geography and Sustainability
Faculty of Geoscience and Environment

This is a PhD research project on *Land use transition and Socio-ecological outcomes in the Cocoa Sector of Asunafo.* The fieldwork assignment is designed to obtain data on the:

a. Socio-economic characteristics of cocoa farmers
b. Characterisation of cocoa agroecosystem (structure, composition and functions)
c. Dynamics of cocoa commodity chain relations
d. Farmers response to changes in their cocoa agroecosystems
e. Institutional/governance framework that guide and shape land use choices and the species composition in cocoa production systems

The research is purely for academic purpose and therefore respondents/informants are assured of their anonymity and confidentiality of any information they provide.

Name of Village or community: _____
Name of District: _____
Ownership status: _____
Date and Time: _____

1. What are the socio-economic characteristics of (cocoa farmer: caretaker, sharecropper, landlord)?
   a. Age: _____
   b. Household size: _____
   c. Gender: _____
   d. Marital status: _____
   e. Ethnicity: _____
   f. Education: _____
   g. Residential status: _____
   h. Years in farming: _____
   i. Location of farm/Proximity* _____
   j. Farm size: _____
   k. Other occupation: _____
   l. Income level: _____
   m. Expenditure: _____
2. How many cocoa farms do you have?
3. Where are they located?

4. Do you have any other farm(s) apart from the cocoa?
5. Are they located closer to /on the same the cocoa land? Why.....
6. What is the age of the cocoa farm/tree?
   Expectations:
   a. Uniform
   b. Mixed
7. How are the cocoa tree spaced on your farm?
8. What is the cocoa breed?
   Expectations:
   a. Uniform
   b. Mixed (or grafted)
9. Have you at any point in time replace the old with new breed?
10. Did you use seed or seedling during the initial planting period?
    Yes/No
11. Why? …..…..……..
12. How did you access them?
13. What is the land use and land cover history of your cocoa farm?
    Expectations:
    a. Primary forest
    b. Secondary forest
    c. Fallow /already cropped land
14. How did you obtain the land/farm?
15. What are the norms or rules binding the acquisition and use of the land?
16. Do you have any spare land? Yes/No: How do you use it?
    ……. How are land issues different from the past?
17. What are the various input you employ on farm?
    Expectation: Production and maintenance phase:
    a. Insecticides
    b. Pesticides
    c. Weedicides
    d. Fungicides
    e. Fertilizer
        i. *Which type of fertilizer do you apply?*
        ii. *Where do you get it?*
        iii. *Who recommended it? or how did you get to know it?*
        iv. *When are you advised to use it?*
        v. *Where do you take your advice from? Why…*
        vi. *Are the advices helpful?*
        vii. *How do you apply the fertilizer?*
        viii. *How many times do you apply the fertilizer?*
        ix. *Were you using different one previously?*
        x. *Why did you choose to change?*
        xi. *How do you obtain the fertilizer? /what means do you use for obtaining the fertilizer?*
        xii. *What is the cost of the fertilizer?*
        xiii. *What purpose does it serve on farm?*
        xiv. *What are the side effects?*
        (do this for all the inputs)

f. Biostimulants
g. Cutlasses
h. Pruning machines
i. Spraying machines
j. Personal safety gears
k. Others

Categories (chemical, mechanical, biological, cultural**)**

18. Which input do you apply regularly?
19. What is the input cost per year?

…….. How is it different from the past?

20. Do you undertake artificial pollination?
21. Why do you think the artificial pollination exercise is necessary now?
22. Do you completely pollinate the whole farm at once? Yes….how/No…why...
23. Do you employ people to pollinate your farm?

….…… **How is it different from the past?**

Expectation: Harvesting and Post-Harvesting phase:

a. Basket
b. Drying mat
c. store
d. sacks
e. others

…….. How is it different from the past?

24. How do you obtain these inputs?
    I. Hiring
    II. Borrowing
    III. Sharing
    IV. Credit
    V. Buying
25. Source of financial capital
    I. Personal savings (how: e.g. from cocoa and another farm produce, sale of property like land etc.)
    II. Credit facility/loan (sources:
    III. Family savings
    IV. Farmer groups/society/cooperative
26. **Production and maintenance relations**
    I. Farmer/caretaker/share cropper **vs** CHED
        a. *What kinds of support do you get from CHED?*
        b. *How do you access their support/advice?*
        c. *What do they advise against?*
        d. *When do they usually deliver such support/advice?*
        e. *How often do they provide you with the support?*
        f. *How are the support beneficial to you(r) cocoa farm?*

        (do this for all the relations)
    II. Among Farmer/caretaker/share croppers
    III. Farmer/caretaker/share cropper **vs** farmer society/cooperatives

IV. Farmer/caretaker/share cropper **vs** NGO
V. Farmer/caretaker/share cropper **vs** forestry commission

…… How is it different from the past?

27. What are your sources of labour?
28. Which period and stage of production do you need labour most? Why
29. How do you source them? (labour contract terms)
30. What is the labour cost per year?

…….. How is it different from the past?

31. What are the plant species located on your farm?
    a. Food crops
    b. Fruit trees
    c. Tree species
        i. *Are they native: Names……..*
        ii. *Are they exotic: Names…..*
        iii. *How do they emerge?*
        iv. *Are you satisfied with tree species on farm?*

        (do this for all plant species)
    d. Understorey
    e. Weeds
32. Where are they located on your farm and why?
33. How are they spaced on your farms?
34. What are the significance of these species on farm?

I.	Food Production
II.	Fuel/firewood
III.	Fiber
IV.	Income
V.	Traditional medicine
VI.	Tools
VII.	Livestock feed
VIII.	Cultural values
IX.	Soil nutrient recycling/soil fertility
X.	Soil moisture retention
XI.	Pest control
XII.	Disease control
XIII.	Detoxification of noxious chemicals
XIV.	Shading
XV.	Water conservation
XVI.	Prevention of soil erosion
XVII.	Habitat for animals
XVIII.	Other

(do this for all plant species)

35. How are the benefit of plant species shared/distributed? (within households, among farmers, between land owner and caretaker or share cropper)
    a. food crops
    b. fruit trees
    c. Tree species (economic shade trees and others)

    d. Understorey
    e. Weeds

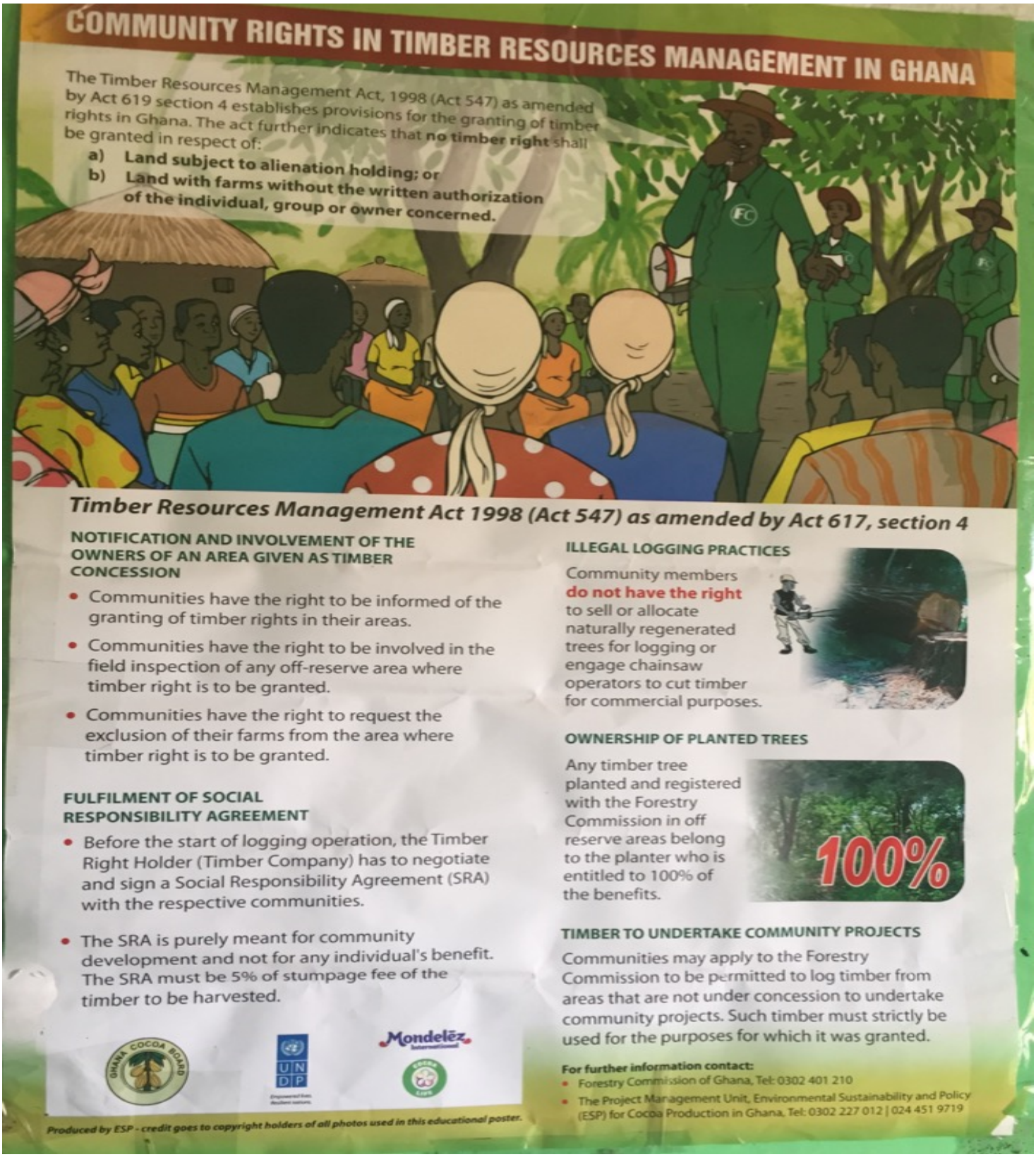
36. What are the diseases that affect your farm crops?
37. What are the pest and insect that harm your cocoa plant?
    …….. How do you manage them?
38. How do wind and rainstorm affect your farm?
39. How does drought influence your cocoa trees?
    …….. How do you manage them?
    …….. How is it different from the past?
40. How do you manage your losses if any?
41. Do you have any farm insurance?
42. How do other livelihood activities affect your cocoa farm management practices?
43. Which farmer groups/society/cooperative are you affiliated to?
44. What benefit do you gain from being a member?
45. How do they shape your farming practices?
46. What challenges do you encounter by being a member?
47. What do you wish must be addressed urgently?
48. **Post harvesting relations (including benefit sharing such as money from produce and premium)**
    I. Caretaker **vs** farmer (also farmer vs landowner if the farm is share-cropping)
        a. *How do you share the benefit (bags of cocoa beans, money/premium) with the farmer/caretaker?*
        b. *Is it under formal or verbal contract? (Ask contract details and dynamics)*
        c. *How many farmers/caretakers have you worked with?*
        d. *Why do you change from one to another?*
        e. *What are the roles of the farmer and caretaker?*
        f. *What kind of support do you get from the farmer*
        g. *Does the farmer buy inputs?*
        h. *How many times in a year?*
        i. *How do you resolve conflicts when some come up?*
        j. *If affiliated to a farmer group, who attends meetings?*
        k. *Who introduces you to the group?*
        l. *Does the farmer know your customers (buying companies)? Why….*

    II. Farmer **vs** labour
    III. Farmer **vs** purchasing clerks/District officers
        a. *Which buying company (ies) do you sell your produce to? Why....*
        b. *How were you introduced or who introduce you to the buying companies?*
        c. *What benefit/incentives do you get by selling your produce to that company?*
        d. *What challenges do you encounter with the purchasing process?* *
        e. *Have you ever change from one to another company? Why….*

    IV. Farmer/caretaker/share cropper **vs** farmer society/cooperatives
49. How many bags do you produce per year?
50. How is it different from the past?
51. What is causing /has caused it?
52. Are you satisfied with the current methods of cocoa production? Why

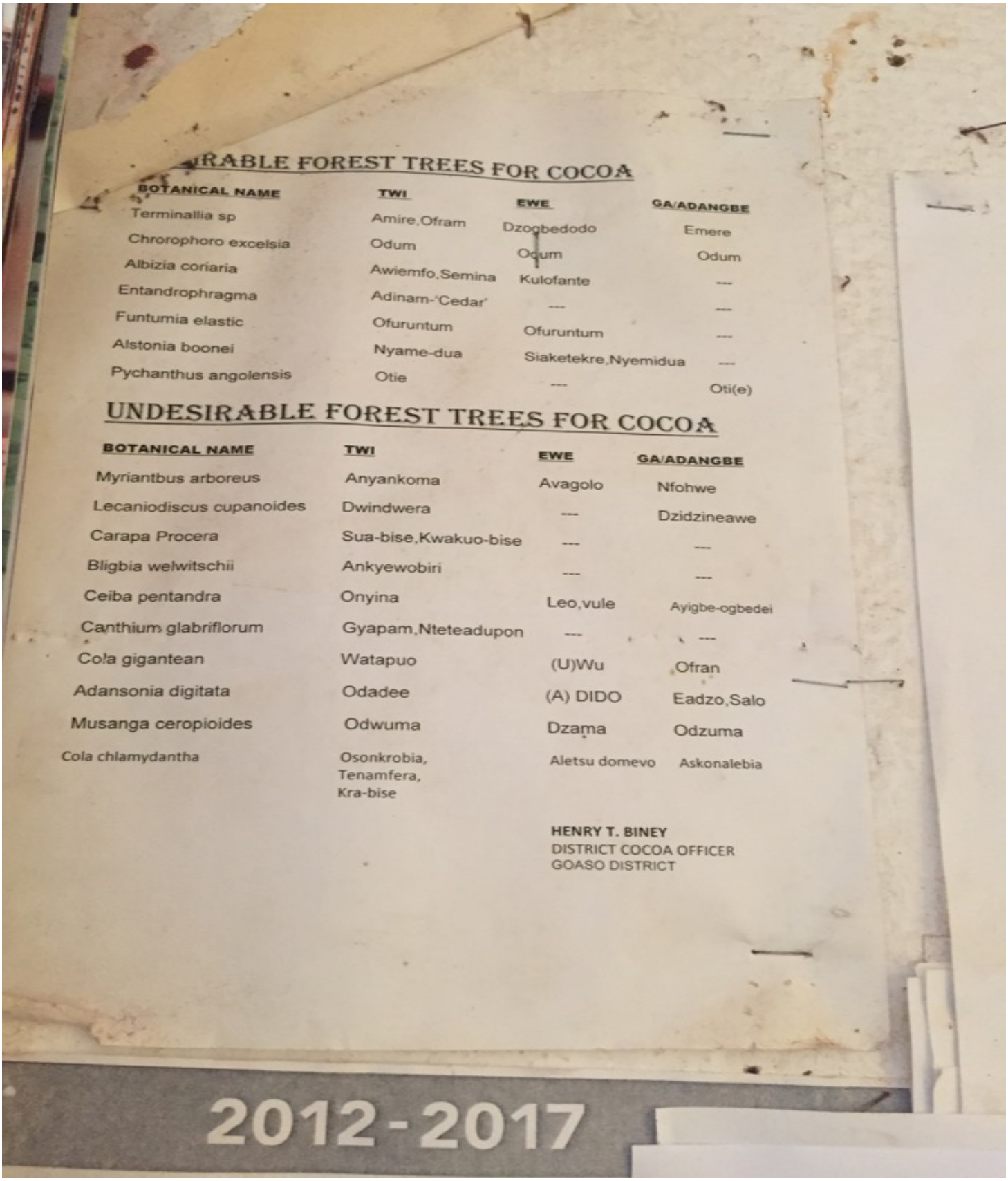
Appendix 3

Poster in a village detailing the forest rights and responsibilities of farmers and the communities



Appendix 4

Standardised list of desirable and Undesirable trees on farms by CHED



RABLE FOREST TREES FOR COCOA

BOTANICAL NAME	TWI	EWE	GA/ADANGBE
Terminallia sp	Amire,Ofram	Dzogbedodo	Emere
Chrorophoro excelsia	Odum	Odum	Odum
Albizia coriaria	Awiemfo,Semina	Kulofante	---
Entandrophragma	Adinam-'Cedar'	---	---
Funtumia elastic	Ofuruntum	Ofuruntum	---
Alstonia boonei	Nyame-dua	Siaketekre,Nyemidua	---
Pychanthus angolensis	Otie	---	Oti(e)

UNDESIRABLE FOREST TREES FOR COCOA

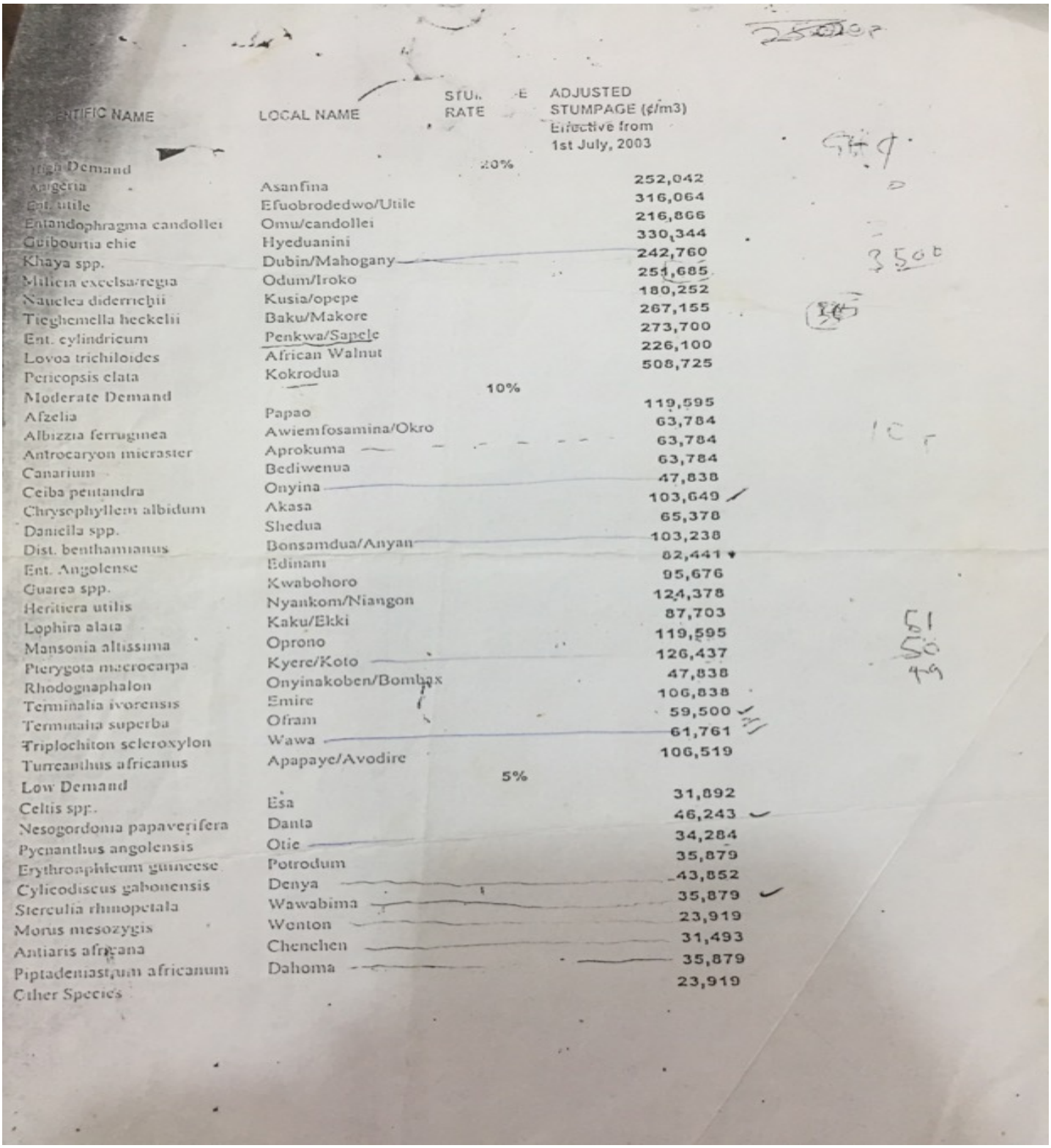
BOTANICAL NAME	TWI	EWE	GA/ADANGBE
Myriantbus arboreus	Anyankoma	Avagolo	Nfohwe
Lecaniodiscus cupanoides	Dwindwera	---	Dzidzineawe
Carapa Procera	Sua-bise,Kwakuo-bise	---	---
Bligbia welwitschii	Ankyewobiri	---	---
Ceiba pentandra	Onyina	Leo,vule	Ayigbe-ogbedei
Canthium glabriflorum	Gyapam,Nteteadupon	---	---
Cola gigantean	Watapuo	(U)Wu	Ofran
Adansonia digitata	Odadee	(A) DIDO	Eadzo,Salo
Musanga ceropioides	Odwuma	Dzama	Odzuma
Cola chlamydantha	Osonkrobia, Tenamfera, Kra-bise	Aletsu domevo	Askonalebia

HENRY T. BINEY
DISTRICT COCOA OFFICER
GOASO DISTRICT

2012-2017

Appendix 5

Some local and botanical names of economic shaded trees obtained from the Forestry Commission



SCIENTIFIC NAME	LOCAL NAME	STUMPAGE RATE	ADJUSTED STUMPAGE (¢/m3) Effective from 1st July, 2003
High Demand		20%	
Aningeria	Asanfina		252,042
Ent. utile	Efuobrodedwo/Utile		316,064
Entandophragma candollei	Omu/candollei		216,866
Guibourtia chie	Hyeduanini		330,344
Khaya spp.	Dubin/Mahogany		242,760
Milicia excelsa/regia	Odum/Iroko		251,685
Nauclea diderrichii	Kusia/opepe		180,252
Tieghemella heckelii	Baku/Makore		267,155
Ent. cylindricum	Penkwa/Sapele		273,700
Lovoa trichiloides	African Walnut		226,100
Pericopsis elata	Kokrodua		508,725
Moderate Demand		10%	
Afzelia	Papao		119,595
Albizzia ferruginea	Awiemfosamina/Okro		63,784
Antrocaryon micraster	Aprokuma		63,784
Canarium	Bediwenua		63,784
Ceiba pentandra	Onyina		47,838
Chrysophyllem albidum	Akasa		103,649
Daniella spp.	Shedua		65,378
Dist. benthamianus	Bonsamdua/Anyan		103,238
Ent. Angolense	Edinam		82,441
Guarea spp.	Kwabohoro		95,676
Heritiera utilis	Nyankom/Niangon		124,378
Lophira alata	Kaku/Ekki		87,703
Mansonia altissima	Oprono		119,595
Pierygota macrocarpa	Kyere/Koto		126,437
Rhodognaphalon	Onyinakoben/Bombax		47,838
Terminalia ivorensis	Emire		106,838
Terminalia superba	Ofram		59,500
Triplochiton scleroxylon	Wawa		61,761
Turreanthus africanus	Apapaye/Avodire		106,519
Low Demand		5%	
Celtis spp.	Esa		31,892
Nesogordonia papaverifera	Danta		46,243
Pycnanthus angolensis	Otie		34,284
Erythrophleum guineese	Potrodum		35,879
Cylicodiscus gabonensis	Denya		43,852
Sterculia rhinopetala	Wawabima		35,879
Morus mesozygis	Wenton		23,919
Antiaris africana	Chenchen		31,493
Piptadeniastrum africanum	Dahoma		35,879
Other Species			23,919