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Tenure Security and Incomes for Cocoa Farmers: A Political Economy Inquiry of Cocoa Swollen Shoot Viral Disease Eradication Programme in Ghana

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Young African Researchers in Agriculture (YARA) Working Paper 5: Tenure Security and Incomes for Cocoa Farmers: A Political Economy Inquiry of Cocoa Swollen Shoot Viral Disease Eradication Programme in Ghana

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TABLE OF CONTENTS

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Abstract

Agrarian political economy is a critical area of inquiry in agrarian studies. Plant disease outbreaks and associated eradication efforts or the lack thereof, mediate local political economies with implications for smallholder livelihoods. This paper offers a political economy inquiry of a plant disease eradication programme. The paper is situated within the cocoa swollen shoot viral disease (CSSVD) eradication programme in Ghana and examines how CSSVD eradication fosters changing land relations in Ghana's Sefwi cocoa landscape and how this disrupts tenure security and crop incomes for smallholders. Results from the study reveal that an alliance between the government and chiefs in the eradication programme provided an avenue to invoke and institutionalise latent customary tenure norms that changed host-stranger land relations and had consequences for smallholders' willingness and ability to replant their CSSVD-infested farms by themselves. This had attendant consequences for income from cocoa. This paper offers insights on the interests, powers and alliances forged in the plant disease eradication programme and how they (re)construct social relations amid land commercialisation and deepening social differentiation.

Introduction

Access to land and income from crop production are important livelihood assets in agrarian societies. Due to their importance, agrarian scholars raise critical questions when agrarian change or reform exhibit the potential to disrupt them. The disruption to land access and crop income in instances of plant disease epidemics is pronounced and has potential consequences for national and local political scenarios, as well as for economic landscapes. Zadoks' (2017) work on the political economy of plant diseases highlights that the potential outbreak of plant diseases could result in unrest due to deeper socio-economic causes. While Zadoks (2017) highlights that the absence of national and international intervention results in dire political economic consequences regarding the outbreak of diseases discussed in his work, the presence of such interventions also has the potential to (re)construct local and global political economies, as evidenced in the work of De la Cruz (2017) and De la Cruz and Jansen (2018) on Panama disease in banana plants. Plant disease outbreaks and associated eradication programmes therefore, need a political economy inquiry to understand the ways in which they (re)construct social relations in agrarian societies. This is particularly critical in smallholder contexts where the (re)construction of social relations has direct consequences for the livelihoods of smallholders.

'Cocoa rheumatism' is the popular name farmers give to the cocoa swollen shoot viral disease (CSSVD). This name is evident from the swellings, unproductivity and eventual death of cocoa trees when attacked by CSSVD. CSSVD was discovered in Ghana in 1936 (Stevens, 1936) and

confirmed as a viral disease in 1940 (Posnette, 1940) although there exists evidence of its observation in the country in 1922 (Paine, 1945). The disease displays itself in different strains including defoliation and dieback of plants and is considered as the most important viral disease of cocoa in West Africa (Ameyaw et al., 2014). It has adverse effects on tree growth, substantial yield reduction and plant death within two years of infection when a severe strain is involved. The disease has been one of the main factors limiting cocoa productivity in West Africa for more than eight decades (Dzahini-Obiatey et al., 2010). The dire effects of the disease are well proven among scientists, governments and farmers and thus, has received enormous research and policy attention.

Scientists have researched and recommended measures to control and eradicate the disease. These measures have ranged from the removal of visibly infected trees, to the removal of both visibly infected trees and immediate contact trees, to block cutting, treatment and replanting (Thresh and Owusu, 1986). Currently, the recommended measure for CSSVD control is to cut visibly infected trees together with all adjacent healthy trees in blocks of not less than 4 hectares before replanting (Andres et al., 2017). An official eradication programme, noted as the costliest campaign of its kind anywhere in the world, started in 1946 and by the 1980s, had cut more than 200 million trees (Ampofo, 1997; Thresh et al., 1988). Despite its costs, farmers oppose any official eradication recommendations. Instead, they plant new seedlings in infested farms to rehabilitate the plants (Dzahini-Obiatey et al., 2010). Contact with old infected trees is the major source of CSSVD reinfection, and thus reinfection has been the norm (Ameyaw et al., 2014; Thresh and Owusu, 1986) and previously scattered outbreak areas have become epicentres (Domfeh et al., 2011).

Average farm sizes for smallholder cocoa farmers in Ghana are less than 4 hectares (Anim-Kwapong and Frimpong, 2005). The cutting-out recommendation of 4 hectares thus implies cutting down entire farm(s) of many smallholders and would result in loss of income from cocoa. Additionally, the historical social differentiation between migrants and indigenes embedded in access to land for cocoa production is now pronounced due to land commercialisation. The ownership and user rights of land for migrant cocoa farmers are evolving rapidly as landowners are increasingly tying tenure security to the life of trees. Evidence shows that migrants lose their ownership and/or user rights when the land goes unused (Berry, 1993). Cutting down cocoa trees for replanting is one of the ways lands become ‘unused’ and demanding renegotiation with landowners or giving up farms entirely (Roth et al., 2017; Takane, 2000). Tenure insecurity and loss of cocoa incomes are therefore, cited as major reasons why farmers persistently resist eradication programmes and keep infected trees on their farms (see Ameyaw et al., 2014; Dzahini-Obiatey et al., 2010; Thresh et al., 1988).

The cutting-out recommendation for CSSVD control brings to the fore critical questions concerning cocoa incomes and land tenure. Efforts to control the disease have the potential to lead to loss of income as well as to reshape migrant-host land relations with attendant consequences for the local political economy in which livelihoods are embedded. Since the 1940s however, plant scientists dominate academic research on CSSVD and its eradication. Agronomic studies on the usefulness of block planting (Benstead, 1951), the removal of known infected plants in the area (Ampofo and Osei-Bonsu, 1988), the use of cordons (Ollennu et al., 1989), planting of barrier crops in cordons (Ollennu et al., 2002) and indexing the disease and reinfection (Dzahini-Obiatey et al., 2006) among others have been conducted and resulted in improvement in control measures. On the social dimension however, there is a dearth of critical agrarian discourse on CSSVD eradication.

Critical social analysis of CSSVD eradication has been lacking. Analysis has not moved beyond the cursory mention of the “risk-averse Ghanaian cocoa farmer, who wants cocoa at all costs ...

and reluctant ... to leave ... areas of land unplanted" and associated suggestions to adopt appropriate communication and extension strategies to modify farmers' attitudes (Dzahini-Obiatey et al., 2006: 4). This paper departs from such simplified social analysis and provides critical analysis of a CSSVD eradication programme positioned within the lens of agrarian political economy – defined in the mission statement of the *Journal of Agrarian Change*, as analysis of "social relations and dynamics of production and reproduction, property and power in agrarian formations and their processes of change, both historical and contemporary". This paper adopts the above definition of agrarian political economy to examine the political economy of CSSVD eradication in Ghana. It specifically examines the actors, interests and alliances formed within the eradication programme and its implications for the land access and livelihoods of cocoa farmers.

This paper is organised as follows: after this introductory section, I highlight the theoretical perspectives employed as lenses in this analysis. Thereafter, I give a brief context of CSSVD eradication efforts in Ghana and land tenure in the cocoa landscape. I then present the methods used in this study, followed by results in the ongoing eradication programme and its intersection with incomes, land and associated resistance. I then zoom in on the programme response and examine how managing the interests of various actors in the programme and alliances formed, thus constructing the political economy of the eradication programme.

Social Differentiation and Resistance: Towards a Political Economy Framework of CSSVD Eradication

Social differentiation

Social differentiation reflects a societal stratification of persons into social groups in which a distinction between these social groups consciously and unconsciously results in roles and statuses in a given society. As a result, a hierarchy of status develops along the different social groups. Social heterogeneity is a part of social life. Thus, how this heterogeneity influences inequality between groups and among strata and how these multiple social distinctions affect social relations, is a critical area of inquiry. Social differentiation with regards to nationality, class, race and sex, among others, have become key areas of research in agrarian studies.

Within the agrarian political economics of sub-Saharan Africa, Tsikata (2015) indicates that the key components of social relations are class, patrol-client, gender, kinship and generation, and host-stranger relations of race, nationality and local citizenship. The different social relations intersect in many ways and reinforce privilege, advantages, hierarchies, inequalities and disadvantages. There are economic, social and political dimensions of social relations which enable certain groups and individuals to accumulate material and non-material resources. Within the discussion of agrarian political economy, these include land, labour, capital, technologies, knowledge, various skills and socio-political status (Tsikata, 2015).

Resistance

Scott (1989) defines resistance as the actions of members of a lower class of society with a view to alleviate or reject demands imposed on them by a middle to upper class or to submit their own claims to the class above. Resistance exists against factors such as: material domination; assertion of worth or desecration of status symbols against status domination; counter-ideologies against ideological domination; direct resistance by disguised resisters against material domination; hidden transcripts of anger against status domination; and dissident subcultures against ideological domination. Everyday resistance is a practice that is historically

entangled with power, intersects with the powers it engages with, and is heterogenic and contingent due to changing contexts and situations (Vinthagen and Johansson, 2013). Scott (1985) highlights that resistance could be public or disguised resistance and could be understood as a continuum between public confrontations and hidden subversion. The form of resistance according to Scott (1985), depends on the form of power. Thus, the key to analysing the weak, is to recognise that they are not truly weak and to appreciate that power is relational in the quest to keep subjects of that power under observation (Carroll, 1972).

Thomson (2011) espouses that everyday acts of resistance include some combination of persistence, prudence, and individual effort to carry out a specific goal. Thomson further explicates that resistance has three main qualities. The first is the combination of persistence, prudence, and individual effort to carry out a specific goal. The second is a lack of awareness on the part of the target. The third is the benefit to the register which may be long-term but has most often been in the short-term. Communities organise themselves in response to the pressures of encroaching societal entities and develop strategies for survival and resistance in response to the expanding impact of, for example, market relations, class struggles and ethno-cultural identity conflicts (Cottyn and Vanhaute, 2016). Land relations and land rights are major parts of class struggles and thus, the transformation of land relations and associated land rights form one of the essential driving forces of resistance in agrarian economies.

Agrarian political economy of CSSVD eradication programme

The Journal of Agrarian Change defines agrarian political economy as analysis of social relations and dynamics of production and reproduction, property and power in agrarian formations and their processes of change, both historical and contemporary. There is an emerging consensus on growing social differentiation resulting from change in the agrarian political economy partly influenced and being influenced by factors such as land and agricultural commercialisation, and the growing scarcity of land (Tsikata, 2015). In the cocoa landscape in Ghana, new economic, demographic and socio-environmental pressures on land mediate social relations and associated differentiation along the lines of class, patrol-client, gender, kinship and generation, and host-stranger relations. In host-stranger relations for instance, Sward (2017) notes that in recent years, customary land tenure systems often marginalised migrants because of land scarcity in recent decades in many parts of the Ghana. This affects the way land is transferred and the claims migrants can make in relation to land in especially customary tenancies with implications for production and reproduction.

In case of deepening social differentiation between indigenes and migrants with attendant changing land relations usually unfavourable to migrants, resistance either in the form of public confrontation or disguised resistance becomes inevitable as tenure security of migrants is threatened in the CSSVD eradication programme. In this study, the theoretical perspectives of social differentiation and associated changing land relations and resistance present a useful lens in analysing the processes and dynamics that mediate and (re)construct agrarian relations of production and reproduction within the CSSVD eradication programme in the Western North Region of Ghana.

CSSVD Eradication and the Land Question in Ghana's Cocoa Sector

Brief history of CSSVD outbreak and eradication in Ghana

After CSSVD was discovered in Ghana in 1936 (Stevens, 1936) and confirmed as a viral disease in 1940 (Posnette, 1940), it became a major challenge and threatened to wipe out cocoa in the

then Gold Coast in the 1940s (Dzahini-Obiatey et al., 2006). The colonial government dedicated vast financial resources and personnel to a nationwide eradication campaign. The campaign began in 1946 and reports indicate that it led to a seeming neglect of investments in other agricultural ventures (Owusu, 1983; Owusu et al.,1996). The campaign was characterised by the clearing and replanting of large tracts of land in contiguous blocks in the 1950s (Owusu, 1983). The government invested in media campaigns and mass education on the benefits of the programme and attached cash compensation to the removal of trees (Ameyaw et al., 2014). Ameyaw et al. (2014) indicate that at the beginning of the cutting-out programme in 1946, the colonial government forcefully implemented the programme and made the removal of trees compulsory. Farmers who resisted the programme could be arrested by cocoa officers who had been empowered to do so (Owusu, 1983; Thresh and Owusu, 1986).

Farmers opposed the CSSVD eradication programme in 1948, saying it had negative consequences for their welfare (Ameyaw, 2006). This led to a suspension of the programme and an inquiry was launched into farmers' claims. The report of the inquiry confirmed the cutting-out method as the best method for eradication and thus, the programme resumed in 1949 (Ameyaw, 2006). Compulsory cutting was however, replaced with voluntary cutting-out in 1951 (Thresh and Owusu, 1986) while compulsory cutting was restarted in 1952 in areas of mass infection (Quartey-Papafio, 1961). In 1962 when the disease seemed under control, the then government disbanded the division responsible for the cutting-out campaign and individual farmers were expected to voluntarily continue with the programme (Ameyaw et al., 2014). Farmers however, did not continue. In 1969, the government started the programme with a 'plant-as-you-cut' scheme.

The 'plant-as-you-cut' scheme ran from the 1970s to the early 1980s. In this scheme, the government cut and replanted infected farms and kept them for a while before returning them to their owners. This scheme ran well until government decided to revert to the old scheme of block-cutting with compensation (Thresh and Owusu, 1986). Farmers opposed the reversion to the old scheme and the programme was suspended again until the mid-1980s when it was restarted, although with funding challenges and continuing farmer opposition (Ameyaw, 2006). At the turn of the new millennium, the European Union-STABilisation des recettes d'Exportation (EU-STABEX) funded eradication efforts in scattered-outbreak areas and farms between the scattered-outbreak areas and most severely affected areas. With facilitation from the cocoa swollen shoot virus control unit of the Ghana Cocoa Board, the CSSVD official eradication campaign has been sustained until the present. Currently, the ongoing eradication programme is being partly financed with a loan facilitated by the African Development Bank.

Since its inception, the programme has been expensive, labour-intensive, fraught with farmer opposition and funding challenges and thus, has had little success (Lartey, 2013). Throughout the history of CSSVD eradication, land and livelihoods have been sources of concern for farmers and served as drivers of resistance. These factors have been at the fore-front of farmers' choice to plant new seedlings in old infested farms as a means of maintaining income from cocoa and/or to avoid rendering land 'unused' and bearing the associated consequences. Owusu and Ollennu (1997) indicated that, land tenure challenges in some of the CSSVD-endemic areas in Ghana impede block-cutting and planting and render the cutting-out programme less effective. Although it has been indicated that farmers prefer to abandon their old infected farms in search of new virgin lands for cocoa cultivation with attendant consequences and reduction in productivity and available farming lands (Clough et al., 2009; Frimpong et al., 2007), that choice is less practical currently, due to land scarcity in the cocoa landscape.

CSSVD reinfection continues to be the norm and the disease is more prevalent now. The Western Region of Ghana (now Western and Western North Regions), a previously scattered

outbreak area, is now considered the epicentre of CSSVD (Domfeh et al., 2011). An official eradication programme has started in the Western North region and officials have cut several hectares while others are earmarked to be cut, replanted, kept and handed over to their owners.

The land question in Ghana's cocoa landscape

Land governance encompasses processes, rules and structures through which decisions are made about access to land and its use, the way the decisions are implemented and enforced, and the ways that competing interests in land are managed (Palmer et al., 2009). Within the cocoa landscape in Ghana, land is governed by customarily derived norms and practices that determine land tenure arrangements, ownership and use (Quaye et al., 2014). Although the diversity in customs, norms and traditions results in diverse customary land systems, these systems are governed by common principles (Arko-Adjei, 2011). One of these is the principle that every indigene by virtue of his/her membership of the group has access to land (Arko-Adjei, 2011). Associated with this principle is the principle recognising the member's right to anything that he/she has created on land which can be inherited (Arko-Adjei, 2011). By these conjoined principles, customary land systems operate in a network of reciprocal bonds within communities/clans/families as social units and create a social differentiation between group members, such as indigenes and non-members, such as migrants, in their access to and use of land.

In Ghana, cocoa cultivation is historically linked to migration. The spread of the cocoa frontier continues to be influenced by migrants from cocoa-producing regions who move to new frontiers to look for land for cultivation. In the earliest accounts of this spread of the frontier of cultivation, Hill (1956) noted that migrants were accessing land through outright purchase. She indicated that a greater volume of the cocoa that was produced in the southern part of Ghana up to about 1911 was cultivated on lands which were acquired by outright purchase by migrants or stranger-farmers for the sole purpose of cocoa production. Similarly, Arhin (1988) and Benneh (1970) reported that the sale of land to migrant cocoa farmers was practiced in the Sefwi areas. According to Arhin (1988), the migrants who acquired land through outright purchase became landlords and could speculate in land and elevate above migrants who were in rental agreements.

Arhin (1988) acknowledged that many migrants were not able to get lands through outright purchase but through sharecropping. Dating back to the 1930s, many migrant cocoa farmers got land through the institution of sharecropping, where farms that were started and kept by a sharecropper (tenant farmer) was divided between the tenant farmer and the landowner when the trees started yielding beans (Vigneri, 2008). Sharecropping expanded rapidly when the farm-gate price for cocoa improved and many migrants moved to cocoa-growing regions to acquire land for cocoa farming (Ruf, 2011). Presently, there are many farmers classified as migrants in the communities where their farms are located; and there exists a social differentiation between these migrants and indigenes in migrant-host relations. Among migrants however, there is a distinct economic differentiation of poor, middle and rich peasants (Bernstein, 1979) with different access to land as a means of production. There is a small, rich class – approximately 5% (Arhin, 1988) of migrant cocoa farmers, or what Hill (1963) calls capitalist cocoa farmers who bought land outright; a middle class of migrant cocoa farmers in sharecropping agreements; and a poor class of migrants who work primarily as labourers in the cocoa landscape.

In the past, the availability of suitable forests that were sparsely populated or uninhabited made land access favourable for the outright sales to migrants (Hill, 1956). Presently however, the access, ownership and user rights that migrants have over land are evolving rapidly in the face

of increasing land scarcity. Sward (2017) noted that in customary land tenure systems, it is often the case that migrants are marginalised. This practice of marginalising migrants in customary land tenure frameworks has emerged because of the scarcity of land in recent decades in many parts of the country. The terms are becoming less favourable, as tenure security is now tied to the life of trees rather than to the land and some evidence indicates that user rights are lost when the land goes unused (Berry, 1993). Cutting down cocoa trees for replanting is one of the ways of rendering land 'unused' and demands renegotiation with the landowner or even giving up the farm entirely (Roth et al, 2017; Takane, 2000).

Study Area and Research Methods

Study Area

The study was conducted in the Western North Region of Ghana. The availability of sparsely populated forest lands in this area made it the latest frontier of cocoa production from the late 1960s onwards. As archetypal with new cocoa frontiers, the area experienced an influx of migrants from the 1970s to the 1990s. The region is home to many migrant cocoa farmers, especially from the Ahafo, Bono, Bono East, and Central regions, who constituted the first wave of migrants. There was also a second wave of migrants from the five regions of northern Ghana, who came in as caretakers for existing cocoa farms and later got land for cocoa cultivation. The Western North region is an important cocoa-producing region in Ghana and is the current epicentre of the CSSVD outbreak, especially in the Bia West and Bia East districts which have been the focus of the current eradication programme.

The study was conducted in the Bia West district. Four communities with diverse impacts of the CSSVD were selected. Pillar 34 is a severe outbreak area where cocoa trees are dead and cutting-out and replanting has started. Yawmatwa is a severe outbreak area but cutting-out is yet to start. Kojoaba is a scattered outbreak area on the verge of being a severe outbreak area. The place has been surveyed and earmarked for eradication. Oseikwadwokrom is a scattered outbreak area where the official eradication programme survey is yet to take place. While the study is not a comparative analysis of these communities, the differences in outbreak impacts and eradication programme stages present diverse realities for a more nuanced analysis.

Data collection and analysis

The study primarily used qualitative methods to unpack the everyday experiences of respondents with regards to the CSSVD. Individual in-depth interviews (IDIs), focus group discussions (FGDs) and field observations (FOs) were adopted. A total of 39 respondents took part in the 42 IDIs. This included three officials from the Cocoa Disease and Pest Control (CODAPEC) programme office at the district capital. These officials explained the ongoing eradication programme in the district and the various stages of government interventions in different impact zones. They were interviewed during two rounds, one before data collection in the communities and the second round after data collection in the communities. Five chiefs and sub-chiefs from the communities were also interviewed. They spoke extensively about the customary land tenure regime governing access and use of land for cocoa farming in the area, the current changes affecting the system and the new conditions attached to land access and use. They also discussed current negotiations with migrant cocoa farmers and the government in the official eradication programme. Five indigenes who are members of landowning clans/families and eight other indigenes and 18 migrant cocoa farmers were also interviewed to share their experiences of the CSSVD outbreak and tensions around land and incomes within the eradication programme.

In addition to the in-depth interviews, four FGDs were conducted in three out of the four communities. In Oseikwadwokrom, two FGDs – one for migrants and one for indigenes – were conducted while in Kojoaba and Yawmatwa one FGD each, including both migrants and indigenes, were conducted. A total of 17 migrants and 11 indigenes took part in the FGDs. No FGD was conducted in Pillar 34 because farming activities had halted and only a few labourers who had been employed by the eradication programme for replanting were present while actual farmers – both migrants and indigenes – were out of the community. In this community, I observed the activities of the eradication team at work for two days.

All the interviews and FGDs were recorded, transcribed and analysed. Narrative summaries from the different actors were written-up and detailed written case studies were also captured for each community, based on emerging properties. These emerging properties make up the main themes around which the results and discussions of this study are presented. Data collection took place at the district and community levels. No primary data was collected at the national office of CODAPEC or Ghana Cocoa Board. Therefore, the analysis in this paper does not include ongoing discussions at the national level, except when such discussions intersected with events at the district and communities of study.

Results: CSSVD Outbreak and Eradication: Cocoa Incomes, Land Tenure and Resistance

The Cocoa Health and Extension Division (CHED) of the Ghana Cocoa Board (COCOBOD) diagnosed an outbreak of CSSVD in the Bia district (currently Bia East and Bia West districts) in the 2010/11 cocoa season. The division sectored the district into areas of mass infection (AMIs) and scattered outbreak areas and started a cutting and replanting treatment in the AMI on a small scale. In the 2014/15 season, the division stopped the treatment and asked farmers to continue. Treatment involves hiring labour and a machine for cutting, getting arboricide for treatment of stumps and replanting. Also, the recommended cutting may need larger blocks of hectares spanning multiple farms and demands coordinated action. Thus, only one farmer, who is the chief of the Abosi community, cut his 10 hectare-farm and replanted while the others did not (IDI, District Extension Coordinator). During this season, the government was distributing free fertilisers to cocoa farmers, thus, many farmers kept applying these fertilisers to their CSSVD-infested farms with the hope to regenerate them. This was however unsuccessful, and the cocoa trees continued dying.

On 23 August 2018, the governments of Ghana and Cote d'Ivoire launched a joint programme to rehabilitate both CSSVD-infected and overaged cocoa farms at Pillar 34, one of the study communities. As part of this programme, the extension division started the cutting and replanting treatment again. In the current programme, the division cuts down infected cocoa trees, treats the stumps with arboricide, weeds the land, and plants plantain suckers and economic trees in the first year. Cocoa seedlings are then planted in the second year when the plantain is matured and producing enough shade after which the farm is given back to the owner. To meet the labour demands for these activities, the district manager for extension converted old mass spraying gangs of COCOBOD to weeding and planting gangs for the programme.

Like other eradication programmes in the past, the current programme has met resistance from farmers and threats to livelihood and tenure security have been major sources of this resistance (IDI, District Extension Coordinator and District Deputy Extension Coordinator, November 2019). Kwaku Bonah's experience (Vignette 1) is an illustration of resistance towards the eradication programme. The resistance, coupled with funding challenges, has resulted in slow

progress of the programme. At the time of data collection, the programme was in the second year of implementation and only about 5% of the affected area had been cut and planted with plantain suckers (IDI, District Extension Coordinator, 17 October 2019).

Vignette 1: Kwaku Bonah's story

> Kwaku Bonah is a 47-year-old owner of two cocoa farms: a 2.5 hectares farm, planted in the 1970s, which he inherited from his father; and a 1.2-hectares farm he started in 1999 through sharecropping. His inherited farm is old, less productive and needs replanting to rehabilitate. Bonah has been planting new seedlings underneath the aged farm for the past 3 seasons. CSSVD has however, infected both of his farms and a greater number of trees are dying. He bemoaned: "This cocoa rheumatism has attacked my farms and taken away a lot of the income I make from the farms. I barely even have money to feed my family but CODAPEC wants us to cut down the trees. What money will I spend before the new cocoa that I will plant, starts producing? Then again, the chiefs are saying when we cut the trees, the land goes back to them. I do not want to lose my income totally, and more importantly, I do not want to lose the land. I would have failed my father if I lose his land. That is the reason why I have vowed not to allow anyone to cut down my cocoa trees."

Kwaku Bonah's experience epitomises the lived realities of many farmers in the CSSVD outbreak areas. For many of these farmers, their lived realities are an intersection of loss of income from cocoa, threat to tenure security and the need to build resistance.

CSSVD eradication and income from cocoa in Bia West

Cocoa farming is a way of life and thus, to many cocoa farmers, cutting cocoa trees implies losing a part of their life. Despite this, an immediate threat of the CSSVD outbreak and eradication efforts is the loss of income from cocoa. In the cocoa-growing communities, cocoa is the mainstay of the local economy and the pivot around which trade and commerce revolve. However, the CSSVD outbreak has led to a reduction in incomes and has affected livelihoods drastically. Many farmers have been desperately replanting new cocoa seedlings on infected farms as an effort to rejuvenate farms and secure income from cocoa production. Despite the enormous labour and time investments in this rehabilitation approach, reinfections are high and young plants barely survive to fruit-bearing stage. Efforts are therefore, rendered fruitless. Resultantly, relatively well-to-do farmers are diversifying into other income-generation activities such as buying of cocoa or planting cashew. For many other farmers in the scattered outbreak areas, they are locked in the cycle of underplanting and reinfection while those in the severe outbreak areas have resorted to outmigration as a livelihood option. Attempts to cut down cocoa trees therefore, pose a threat to the remaining meagre incomes that farmers are getting and can potentially result in a breakdown of livelihoods and the local economy.

CSSVD eradication and land tenure in Bia West

The Bia West area opened up in the late 1960s when migrants from the Bono, Ahafo, Ashanti and Central regions went in search of virgin forests for cocoa cultivation. The wave of migrants attracted indigenes, who also moved from towns to get land in the hinterlands for cocoa

cultivation. The area is within Sefwi paramountcy and thus, land acquisition was through the paramount chief at Sefwi Wiawso or through divisional or sub-chiefs. Indigenes accessed lands through the paramount chief while migrants accessed lands either through the paramount chief or sub-chiefs. Migrants paid seed money in the form of bottles of Schnapps to the chiefs before they started clearance. For both migrants and indigenes, the chiefs allowed access, based on clearance and the rule was to clear land until one reaches a river. The size of the land one was able to clear, became one's land based on first clearance. However, while first clearance gave indigenes customary freehold rights, migrants had customary leasehold rights. Migrants paid an amount of money to the stool lands yearly for the use of the land.

Some migrants lived and worked in existing Sefwi communities, while others set up their own smaller communities with chieftaincy before indigenes came. With the presence of indigenes in such communities, the chieftaincy changed hands from migrants to indigenes and founding migrant lineages were given roles as sub-chiefs. In such migrant-founded communities, significant parts of the lands, are in the hands of migrants. In the post-1983 bush fires era when forests got burnt and access to land for new cocoa farmers was predominantly through sharecropping, the 'owners' of the land who gave it out for sharecropping included a greater number of migrants.

Other conditions were attached to migrants' access to and use of land for cocoa cultivation. One condition was that if a farm is not well-kept, the cocoa dies and the land becomes bare, or weeds take over, and the land reverts to the stool lands. Also, lands were expected to revert to the stool lands when the cocoa tree dies, usually around 50 years. The estimated tree life of cocoa was between 40-50 years then, and thus, tree life was a crude way of deciding how long migrants were expected to occupy lands. In many instances however, lands have been occupied with cocoa even when poorly maintained. Migrant families have held lands for many years and second and third generations of first clearers have inherited these lands and, in some cases, rejuvenated aged cocoa farms. Customary leaseholds usually last for 50 years and thus, the chiefs realised that many migrant farmers have occupied lands beyond their leases and started discussion of renegotiations of such leaseholds.

The chiefs' realisation and discussions for renegotiations happened at a time when the cocoa sector is witnessing land scarcity and resultant economic pressures on existing lands. While migrants have enjoyed a stable tenure security beyond their leaseholds, finding added value for land, made it even more important for chiefs to invoke the social differentiation between migrants and indigenes and apply all the needed conditions of migrant access to land. The paramount chief directed all migrants who had occupied lands for over 50 years to go back to the chiefs to renegotiate the access and renewal of their leases. He asked migrants to pay GHS500 (US$94)/acreage, 30% of which will go to the paramount chief, while 70% will go to one of the 13 sub-chiefs in whose traditional area the land is located.

After full payment of the lease amount, the paramount chief would give receipts, allowing access to and use of the land for another 50 years. At the time of data collection, the chief's directive had been in existence for about 5 years and there were living witnesses to prove the end of leases for many migrants. However, migrant farmers in the study communities had not willingly approached the sub-chiefs to renegotiate and renew leases. As a response to migrants' refusal to renegotiate and renew leases, the chiefs invoked the alternative condition of tying tenure security to tree life and directed all migrants who occupy land with dead cocoa trees to renegotiate and renew their leases. With CSSVD having become severe in many of the areas and leading to the mass death of trees, the outbreak gave an opportunity for the chiefs to enforce the linking of tenure security to tree life and demand renegotiations and renewal of leases.

CSSVD eradication and resistance in Bia West

In the light of ensuing threats to cocoa incomes and tenure security fuelled by CSSVD, farmers built or invoked various levels of resistance. These acts of resistance were mediated by fears that farmers showed in relation to the severity of the outbreak and the stage of the eradication programme. In Oseikwadwokrom where the outbreak was scattered, the fear was about income reduction associated with an increasing reduction in cocoa yields caused by the disease. This fear was higher among those whose farms had been affected, while those not affected yet were going about their usual farming. Farmers with affected farms were getting about 60-70% of their usual cocoa income. Because there was still some substantial yield from certain diseased farms, there was subtle resistance growing among the farmers towards eradication, which was yet to start in the community. There was a dominant narrative that, "30-40% less income is better than nothing and thus, the disease is a lesser evil compared to the eradication programme". This narrative is also evident in Kodjoaba, where the outbreak is moving from scattered to severe, and incomes have reduced by 40-60%. In this community, the resistance was gathering momentum as the programme had surveyed the area for eradication. In these communities, the fear of losing land seemed a bit remote from the migrant farmers, although they knew the conditions around migrant lands.

In Yawmatwa and Pillar 34 where a severe outbreak existed, and the eradication programme had started, cocoa incomes were already lost, and alternative livelihood options were almost non-existent. Thus, many farmers had migrated to look for waged-work in bigger towns outside the region. However, with the cocoa trees already dead, the threat of tenure security was highest in these communities as the CSSVD outbreak had provided an avenue for the enforcement of the directive of linking tenure security to tree life. Migrant farmers therefore resisted the eradication programme. Some farmers engaged in arguments with the officials and in extreme circumstance, invoked curses on them (IDI, Deputy Extension Coordinator). Instead, these farmers kept dead trees on the land and tasked caretakers and labourers to replant seedlings under the old trees or to cut the trees in little blocks and replant them, to keep cocoa on the land and secure their tenures.

When the chiefs realised that replanting had become the norm, they asked farmers to stop replanting. The chiefs indicated that it was unlawful to replant on such lands without renewal of leases. Many migrant farmers did not heed this request and the chiefs directed that newly-replanted lands were also liable to the directive of tenure renewal. Some migrants then started putting up another form of resistance by claiming freehold ownership because their parents and grandparents had bought the land from the chiefs outright. They hired a lawyer to challenge the chiefs over the new directive in the court of law. In a deliberation between the lawyer the chiefs, the latter presented documents showing evidence of leasehold instead of freehold. The lawyer then recommended to the aggrieved migrants not to proceed to court but to accept the directive for renegotiation. Migrants still did not go for renegotiation and a few of them secretly sold their lands and left the communities. The chiefs got angry and one chief succeeded in seizing 6.8 hectares from one migrant farmer and gave it to a timber company.

Fearing the wrath of the chiefs, some migrants discussed the possible reduction of the renewal amounts, with the chiefs. On their part, the chiefs realised that the death of cocoa trees was leading to the 'death' of the communities. There was an urgent need to revive cocoa and rejuvenate the communities. Thus, the chiefs agreed to the request by migrants and reduced the renewal amounts from GHS500 (US$94) to GHS400 (US$75) per acre (GHS1000 or US$188 per hectare). Additionally, the paramount chief indicated that farmers could pay the amounts in instalments. The only requirement was commitment on the part of migrant farmers to make a first part-payment and cut their cocoa trees for replanting while paying the remaining amounts

in instalments. He then directed the sub-chiefs to seize lands from farmers who still refused to initiate a renewal through installed payments. Despite this, migrant farmers still did not start any payments to renew their contract and instead, resisted the eradication programme and intensified underplanting in infected farms.

CSSVD eradication programme response to farmers' resistance in Bia West

Farmers had shown both active and passive resistance to the eradication programme in severe outbreak areas and the momentum of resistance was growing in the scattered outbreak areas. The programme therefore, responded to both loss of income and threat to tenure security. The authorities decided to pay compensation to farmers, in addition to bearing the cost of rehabilitation. Initially, the number of trees on the farm (tree density) was used to calculate compensation to be paid. A one-hectare farm with about 1100 trees would receive a little over GHC500 as compensation. However, because the tree density for many farms was low, some farmers were entitled to compensation as low as GHS64 (US$12). The programme changed the mode of calculating compensation and started paying a fixed amount of GHS1000 (US$188) per hectare. Additionally, the programme planted plantain suckers on the farm in the first year of treatment and the income from the plantains also went to the farmer. While farmers complained that the compensation was low and the seasonality and price fluctuations in plantains made it an unreliable income source, the compensation amounts and meagre incomes from plantains seemed better than nothing in severely affected areas where income from cocoa was already lost. Expectedly, the programme was targeting these areas of mass infection.

With respect to threat to tenure security, the government intervened and agreed with the chiefs to pay the required renewal amounts. In Pillar 34, the chiefs had received some initial payments from the government and had given leasehold documents to the beneficiary farmers a week before data collection started. At the time of data collection, the modus operandi of the programme involved a survey of the affected area, registration of affected farms, issuing of reference number, payment of lease renewal amounts to the chiefs, cutting cocoa trees, payment of compensation to farmers, treatment, planting plantains and replanting cocoa seedlings. Under this arrangement however, migrants were not differentiated from indigenes, and expired leases were not differentiated from non-expired leases. The chiefs received payments for all lands affected by CSSVD whether the land belonged to an indigene or a migrant, or whether the existing leasehold had expired or not. Linking tenure security to tree security was being institutionalised and the chiefs expected farmers who were affected by CSSVD but could not wait for the eradication programme, to also pay GHS1000 (US$188) per hectare if they wanted to cut and replant their cocoa trees.

After the chiefs started receiving the renewal amounts, they actively got involved and supported the officials to enforce the cutting of cocoa trees. They indicated that farmers had no excuse with tenure insecurity to resist the programme. Thus, the programme then started cutting cocoa trees with a strong backing from the chiefs. Chiefs, government and farmers – both indigenes and migrants – became the main actors with diverse interests and power converged around the CSSVD eradication programme. The next section discusses the diverse interests, power and alliances being forged and their implications for the political economy of the eradication programme.

Discussion: Interests, Powers and Alliances in the CSSVD Eradication Programme

Income from cocoa constitutes the main source of livelihood for many cocoa farmers, delivering about 70-100% of their incomes (Anim-Kwapong and Frimpong, 2005). CSSVD infections are leading to immediate loss of income in the short term and disrupting livelihoods of many cocoa-growing households. For migrant farmers, loss of income in the short term is compounded by threat to tenure security and its impact on long-term livelihood options. Thus, farmers employed multiple measures to secure their interests in this cocoa economy. In severe outbreak areas, it was the adoption of direct resistance to both chiefs and the official eradication programme and the adoption of the fruitless venture of underplanting. In scattered outbreak areas, the momentum of resistance was building as the disease became severe and the eradication programme approached. Replanting underneath infected farms and cutting in smaller blocks for replanting had been adopted. For those who found the need to cut the trees and replant them by themselves, they needed arboricide from the CODAPEC office. This was not readily available for all categories of farmers. Thus, some wealthy farmers had started diversifying into rubber, coconut and cashew. For many others, they were unprepared and not looking for alternative livelihood options in anticipation of the mass outbreak and cutting-out.

Cocoa cultivation is the mainstay of the Sefwi economy. It is the pivot around which services, trade and commerce in other goods revolve. An ailing cocoa economy propelled by CSSVD eradication implies the death of towns and villages and increased out-migration. For chiefs therefore, there is a direct negative impact on incomes that come from the yearly payments from many migrant cocoa farmers in this area, as well as a decrease in populations of the towns and communities which they govern. Chiefs therefore, have an enormous and urgent vested interest in the revival of the cocoa sector. Additionally, in an era where the economic value of land has increased due to land scarcity, the process of rejuvenating the cocoa sector presented an opportunity to renegotiate the value of land with many migrant farmers who have occupied lands in this area for many decades.

The government has an interest in the cocoa sector. As the major export crop of the country that contributes to GDP and foreign exchange (Hutchins et al., 2015), the government has been actively involved in the sector since independence. In the programme, the interest of the government of Ghana is to rehabilitate and restore an ailing cocoa sector without compromising the country's status in the global cocoa economy. Thus, the programme targets severely affected areas where cocoa is already dead, cocoa incomes are already lost and income-related resistance is less. By not cutting cocoa trees in scattered outbreak areas, the government avoids the potential high resistance propelled by both income loss and tenure insecurity. This also prevents a drastic decline in production since farms in scattered outbreak areas still bear fruits, albeit in reduced volumes. This ensures that farmers still get some income from cocoa and the government still has relatively more cocoa to export to contribute to its GDP and foreign exchange.

In line with their respective roles and interests in the cocoa sector, farmers, chiefs and the government intersect in various forms of alliances in the eradication programme. One such alliance, is the one between farmers and CODAPEC. While the programme is officially cutting cocoa trees in severe outbreak areas only, some farmers have forged an alliance with the CODAPEC office in the district to cut the trees on their farms in scattered outbreak areas. It was reported that one farmer had contacted CODAPEC and the trees on his six hectares of farmland, located in a scattered outbreak area had been cut down, treated and were about to be replanted. Some farmers in these scattered outbreak areas had also cut down their trees by

themselves and CODAPEC had provided them with the arboricide to treat the stumps before replanting. Others have called on CODAPEC to come and cut the infested portions of their farms but CODAPEC has officially asked them to wait until the eradication programme has reached their communities. While many such farmers have been willing to cut down their infested trees by themselves, they have faced some challenges getting access to the arboricide needed to treat their stumps. Some farmers claimed that those farmers who have connections with persons in CODAPEC are the ones who have managed to get CODAPEC to cut and treat their infested trees or provided them with arboricide to treat tree stumps even though their farms are located in scattered outbreak areas.

Another alliance that is evident in the programme is between the government and chiefs. Chiefs and government have a conjoined interest in the cocoa sector. This interest is evident in a stable production of cocoa, buoyant local economies and associated yearly contribution from migrants to chiefs, and export and foreign exchange for governments. In order to sustain their conjoined interests, chiefs and the government forged an alliance to respond to farmers' tenure-related resistance to the eradication programme. The alliance was epitomised by government's payment of lease renewals for farmers, which resulted in chiefs having access to new land rents. Resultantly, the chiefs are threatening that farmers who prevent the programme from cutting down their cocoa trees will have their land taken away by the chiefs. This alliance has given the chiefs an increasing audacity to demand that farmers cut trees or risk their lands retaken as a property for the stool lands.

Certain conditions have become defining features of the current eradication programme. These include: the successful institutionalisation of linking tenure security to tree life and the demand for new payments for renewal of leases; the difficulty of many farmers to cut their infested trees by themselves and the need for such farmers, migrants and indigenes alike to wait for the official eradication programme to cut down their trees; the merging of interests and formation of alliances in this programme. While these conditions have become normalised, they give rise to questions on the livelihoods effects of the ongoing programme as actors, interests and powers intersect and (re)construct local political economies.

The intersection of interests and powers in the local political economy has implications for farmer livelihoods. Large hectares of cocoa farms are infested, and enormous amounts of money is needed for lease renewal, compensation and replanting in the eradication programme. With only about 5% of affected areas cut, several areas severely affected and earmarked yet to be cut, and the disease moving faster against the pace of the eradication programme, the real impacts on farmer livelihoods and the lack of attention to these challenges in the eradication programme, remain unaddressed. Additionally, with the institutionalisation of the linking of tenure security to tree lives and chiefs demanding new leases from farmers through the CSSVD eradication programme, the real impact of this land governance precedent in the Sefwi cocoa landscape on the ability of many migrant farmers to adopt self-cutting measures, is yet another unresolved matter.

Towards an Agrarian Political Economy of CSSVD Eradication

The significance of the various social categories in agrarian struggle and the representation of interests among these actors, are key areas of inquiry in agrarian studies. Agrarian political economy emphasises an analysis of social relations and dynamics of production, reproduction and power in agrarian processes – both historical and contemporary (Tsikata, 2015). In the CSSVD eradication programme, the government, through CODAPEC, assumes the role of a

major actor whose interests, power and alliance are dominant and underline decisions and choices in the eradication programme.

In the eradication programme, labour for cutting and replanting, arboricides for treatment, and importantly, the renewal of leases, are urgently needed. These requirements are costly for many smallholder farmers to meet, especially when CSSVD has already led to loss of income in severe outbreak areas and drastic reduction in income in scattered outbreak areas. For farmers who have little to no alliances with CODAPEC, it is challenging for them to implement self-cutting. For poor migrant farmers, their inability to pay for new leases, compounds this challenge. For many of these farmers, they can only wait for the eradication programme, which has been slow in pace, to reach their communities. While they wait, those in severe outbreak areas, will have to search harder for non-existent alternative livelihood options, while those in scattered outbreak areas are likely to witness their cocoa-related incomes totally fade away as their farms are re-classified from scattered outbreak to severe outbreak.

With regards to land, the CSSVD programme has provided an avenue to subtly redefine land governance in the Sefwi cocoa landscape. As Palmer et al. (2009) indicate, land governance encompasses the processes, rules and structures through which decisions are made about access to land and its use, the way the decisions are implemented and enforced, and the way that competing interests in land are managed. The programme has become a medium to deepening migrant-host differentiation in land access and use, and the institutionalisation and enforcement of linking tenure security to tree life. The management of competing interests in land in this landscape has led to an alliance between chiefs and the government, in which government intervention is consolidating the power of chiefs in land governance while chiefs' intervention has consolidated government power to enforce the eradication programme.

In the land sector, there have been ongoing reforms to give yet more power to chiefs as administrators of land across all regions of Ghana. Under customary land tenure systems, chiefs and other custodians of customary lands are designated as trustees, and the state recognises this arrangement (Yeboah and Shaw, 2013). In contemporary times, land scarcity and associated commercialisation has become a driving force for the redefinition of the doctrine of trusteeship to one of landlordship, as also highlighted by Boni (2005), in the historical accounts of forest clearance in the Sefwi area. Chiefs are now effectively the principal beneficiaries of funds which accrue from community resources, such as land (Ubink and Quan, 2008) and the amounts accruing from the renewed leases are no exception. While alliances between the government and chiefs in the Sefwi landscape are not new (see Boni, 2005), an alliance between chiefs and the government that engenders the institutionalisation of the linking of tenure security to tree life, is unprecedented. As an unintended outcome, this alliance and the benefits thereof can potentially spark land disputes among chiefs as they reposition themselves to benefit from the new lease amounts. Some evidence exists of disputes emerging among chiefs over territorial boundaries and their entitlement to lease monies paid by the government.

Conclusion

The agrarian political economy of CSSVD eradication is fashioned around social relations between different smallholders, the struggles of the various actors and a consideration of political and economic interests that characterise alliances between the various actors. In the face of increasing land scarcity for cocoa cultivation, there is a deepening social differentiation epitomised by host-stranger relations with attendant implications for land relations in customary systems in the cocoa sector in Ghana. Also, class differentiation between various categories of farmers seems pronounced in an era where investments in cocoa farms are needed to sustain

cocoa incomes. In the eradication of CSSVD, the recommended measure is costly and disincentivises farmers from embarking on self-cutting. While wealthy farmers can initiate and in some cases embark on self-cutting through their alliance with CODAPEC, many poor farmers, both migrants and indigenes who are already experiencing a drastic reduction or loss of income, and with no connections to persons in CODAPEC, find it difficult to engage in self-cutting. For migrant cocoa farmers, their challenge is compounded by the threat to tenure security. In the current CSSVD programme, that seems slow and has prioritised areas of mass infection where the cocoa trees are already dead, poor migrant cocoa farmers are doubly disadvantaged because of their position on the class and host-stranger continuums.

REFERENCES

Ameyaw, G.A. (2006). The 'cutting out' procedure as a control strategy against cacao swollen shoot virus (CSSV) disease in Ghana. MSc Dissertation, University of Reading.

Ameyaw, G.A., Dzahini-Obiatey, H.K. and Domfeh, O. (2014). Perspectives on cocoa swollen shoot virus disease (CSSVD) management in Ghana. Crop Protection, 65, 64–70. https://doi.org/10.1016/j.cropro.2014.07.001

Ampofo, S.T. (1997). The current cocoa swollen shoot virus disease situation in Ghana. Proceedings of INCOPED 1st International Seminar on Cocoa Pests and Diseases, pp. 175–178.

Ampofo, S.T. and Osei-Bonsu, K. (1988). Models for rehabilitating small scale cocoa farms in Ghana. In: Proceedings of the 10th International Cocoa Research Conference, San Domingo, Dominican Republic, May 17–23 1987, pp. 51–55.

Andres, C., Gattinger, A., Dzahini-Obiatey, H.K., Blaser, W.J., Offei, S.K. and Six, J. (2017). Combatting cocoa swollen shoot virus disease: What do we know? Crop Protection, 98, 76–84.

Anim-Kwapong, G.J. and Frimpong, E.B. (2005). Vulnerability and adaptation assessment under the Netherlands Climate Change Studies Assistance Programme Phase 2 (NCCSAP2). Cocoa Research Institute of Ghana (Vol. 2).

Arhin, K. (1988). Economic differentiation among Ghanaian migrant cocoa farmers. Research Review, 4(1), 10–18.

Arko-Adjei, A. (2011). Adapting land administration to the institutional framework of customary tenure: The case of peri-urban Ghana. PhD Thesis, Delft University. https://webapps.itc.utwente.nl/librarywww/papers_2011/phd/arko-adjei.pdf

Benneh, G. (1970). The impact of cocoa cultivation on the traditional land tenure system of the Akan of Ghana. Ghana Journal of Sociology, 6(1), 43–61.

Benstead, J. (1951). Cocoa re-establishment. In: Rep. Cocoa Conference, The Cocoa, Chocolate and Confectionery Alliance, London, pp. 111–115.

Bernstein, J.H. (1979). African peasantries: A theoretical framework. Journal of Peasant Studies, 6(4).

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

Boni, S. (2005). Clearing the Ghanaian forest: Theories and practices of acquisition, transfer and utilisation of farming titles in the Sefwi-Akan area. Institute of African Studies, University of Ghana, Accra.

Carroll, B. (1972). Peace research: The cult of power. Journal of Conflict Resolution, 16(4), 585–616.

Clough, Y., Faust, H. and Tscharntke, T. (2009). Cacao boom and bust: Sustainability of agroforests and opportunities for biodiversity conservation. Conservation Letters, 2(5), 197–205.

Cottyn, H. and Vanhaute, E. (2016). The great commodification and its paradoxes: A historical, comparative and global perspective on land regimes and land reforms. Global Governance/Politics, Climate Justice and Agrarian/Social Justice: Linkages and Challenges. An

International Colloquium, 4-5 February, 2016, International Institute of Social Studies, The Netherlands.

De la Cruz, J. (2017). Panama diseases in banana and neoliberal governance: Towards a political ecology of risk. PhD Thesis, Wageningen University and Research.

De la Cruz, J. and Jansen, K. (2018). Panama disease and contract farming in the Philippines: Towards a political ecology of risk. Journal of Agrarian Change, 18(2), 249–266. https://doi.org/10.1111/joac.12226

Domfeh, O., Dzahini-Obiatey, H., Ameyaw, G.A., Abaka-Ewusie, K. and Opoku, G. (2011). Cocoa swollen shoot disease situation in Ghana: A review of current trends. African Journal of Agricultural Research, 6(22), 5033–5039.

Dzahini-Obiatey, H.K., Akumfi Ameyaw, G. and Ollennu, L.A. (2006). Control of cocoa swollen shoot disease by eradicating infected trees in Ghana: A survey of treated and replanted areas. Crop Protection, 25, 647–652.

Dzahini-Obiatey, H.K., Domfeh, O. and Amoah, F.M. (2010). Over seventy years of a viral disease of cocoa in Ghana: From researchers' perspective. African Journal of Agricultural Research, 5, 476–485.

Frimpong, K.O., Asase, A. and Yelibora, M.A. (2007). Cocoa farming and biodiversity in Ghana. Annual Report 2007, Earthwatch Institute.

Hill, P. (1956). The Gold Coast cocoa farmer. London: Oxford University Press.

Hill, P. (1963). The migrant cocoa farmers of southern Ghana: A study in rural capitalism. Cambridge: Cambridge University Press.

Hutchins, A., Tamargo, A., Bailey, C. and Kim, Y. (2015). Assessment of climate change impact on cocoa production and approaches to adaptation and mitigation: A contextual view of Ghana and Costa Rica. IDS, University of Sussex.

Lartey, L.L. (2013). Mapping cocoa swollen shoot virus disease distribution in Western Region, Ghana. MSc Thesis, Kwame Nkrumah University of Science and Technology, Kumasi.

Ollennu, L.A., Owusu, G.K. and Thresh, J.M. (1989). Spread of cocoa swollen shoot virus to recent plantings in Ghana. Crop Protection, 8(4), 251–264. https://doi.org/10.1016/0261-2194(89)90010-0

Ollennu, L.A., Osei-Bonsu, K., Acheampong, K. and Aneani, F. (2002). Barrier cropping trial. Annual Report: The Cocoa Research Institute of Ghana, 2001/2002.

Owusu, G.K. (1983). The cocoa swollen shoot virus problem in Ghana. In: Plumb, R.T. and Thresh, J.M. (Eds.), Plant virus epidemiology. Oxford: Blackwell Scientific Publications, pp. 73–83.

Owusu, G.K. and Ollennu, L.A. (1997). The problems of the re-infection of replanted cocoa by cocoa swollen virus in Ghana. In: Proceedings of the First International Cocoa Pest and Diseases Seminar, Novotel, Accra, Ghana, 6–10 November 1995, pp. 179–188.

Owusu, G.K., Ollennu, L.A.A. and Dzahini-Obiatey, H. (1996). The prospect of mild strain cross-protection to control cocoa swollen shoot disease in Ghana. In: Proceedings of the 12th International Cocoa Research Conference, Salvador, Brazil, 17–23 November, 1996, pp. 121–127.

Paine, J. (1945). Report of Agronomy Division. West African Cocoa Research Institute, Tafo, Ghana.

Palmer, D., Fricska, S. and Wehrmann, B. (2009). Towards improved land governance. Land Tenure Working Paper 11. Food and Agriculture Organization of the United Nations; United Nations Human Settlements Programme.

Posnette, A.F. (1940). Transmission of 'swollen shoot' disease of cacao. Tropical Agriculture Trinidad 17, 98.

Quartey-Papafio, E. (1961). Notes on the progress of swollen shoot disease control in Ghana. In: Proceedings of Cocoa Conference 1961. Cocoa, Chocolate and Confectionery Alliance, London, pp. 176–178.

Quaye, W., Ampadu, R. and Onumah, J.A. (2014). Review of existing land tenure arrangements in cocoa growing areas and their implications for the cocoa sector in Ghana. An Environmental Sustainability and Policy for Cocoa production in Ghana Project (ESP) Working Paper.

Roth, M., Antwi, Y. and O'Sullivan, R. (2017). Land and natural resource governance and tenure for enabling sustainable cocoa cultivation in Ghana. Washington DC: USAID Tenure and Global Climate Change Programme.

Ruf, F. (2011). The myth of complex cocoa agroforests: The case of Ghana. Human Ecology, 39(3), 373–388. https://doi.org/10.1007/s10745-011-9392-0

Scott, J.C. (1985). Weapons of the weak. New Haven, CT: Yale University Press.

Scott, J.C. (1989). Everyday forms of resistance, Copenhagen Papers, No. 4, pp. 33–62. https://doi.org/10.22439/cjas.v4i1.1765

Stevens, W.F. (1936). Swollen shoot and die-back: A new disease of cocoa. Gold Coast Farmer 5, 144.

Sward, J. (2017). In-migration, customary land tenure, and complexity: Exploring the relationship between changing land tenure norms and differentiated migrant livelihoods in Brong Ahafo, Ghana. Population and Environment 39, 87–106. https://doi.org/10.1007/s11111-017-0277-z

Takane, T. (2000). Incentives embedded in institutions: The case of share contracts in Ghanaian cocoa production. The Developing Economies, 38(3), 374–397. https://doi.org/10.1111/j.1746-1049.2000.tb00883.x

Thomson, S. (2011). Whispering truth to power: The everyday resistance of Rwandan peasants to post-genocide reconciliation. Oxford University Press. https://doi.org/10.1093/afraf/adr021

Thresh, J.M. and Owusu, G.K., (1986). The control of cocoa swollen shoot virus disease in Ghana: An evaluation of eradication procedure. Crop Protection, 5, 41–52.

Thresh, J.M., Owusu, G.K. and Ollennu, L.A.A. (1988). Cocoa swollen shoot virus: An archetypal crowd disease. Journal of Plant Diseases Protection 95, 428–446.

Tsikata, D. (2015). The social relations of agrarian change. IIED Working Paper, February. IIED.

Ubink, J.M. and Quan, J. (2008). How to combine tradition and modernity? Regulating customary land management in Ghana. Land Use Policy, 25(2), 198–213. https://doi.org/10.1016/j.landusepol.2007.06.002

Vigneri, M. (2008). Drivers of change in Ghana's cocoa sector. Ghana Strategy Support Working Paper. International Food Policy Research Institute, Accra.

Vinthagen, S. and Johansson, A. (2013). Everyday resistance: Exploration of a concept and its theories. Resistance Studies Magazine, No. 1, Sweden.

Yeboah, E. and Shaw, D. (2013). Customary land tenure practices in Ghana: Examining the relationship with land-use planning delivery. International Development Planning Review, 35(1). https://doi.org/10.3828/idpr.2013

Zadoks, J.C. (2017). On social and political effects of plant pest and disease epidemics. Phytopathology, 117(10), 1144–1148. https://doi.org/10.1094/PHYTO-10-16-0369-FI