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# REPORT ON LAND TENURE & COCOA PRODUCTION IN GHANA

A CRIG/WCF Collaborative Survey, February 2017

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COVER PHOTO: GHANAIAN COCOA FARMER ESTABLISHING SPECIALLY-APPROVED FARM BOUNDARY PILLARS UNDER THE GUIDANCE OF A LANDMAPP FIELD AGENT (THE PILLAR WILL BE MOUNTED WITH CEMENT AFTER MAPPING). COURTESY: LANDMAPP (WWW.LANDMAPP.NET)

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## EXECUTIVE SUMMARY

This survey was conducted in 2016 to provide information on land tenure and cocoa productivity in Ghana. This was a collaborative study between Cocoa Research Institute of Ghana (CRIG) and the World Cocoa Foundation, with financial support from the United States Agency for International Development (USAID) and the WCF's African Cocoa Initiative (WCF/ACI). The Social Science and Statistics Unit (SSSU) of the Cocoa Research Institute of Ghana (CRIG) conducted the study. The main aim of the study was to assess the land tenure systems prevalent in the production of cocoa in Ghana, and to better understand how various land tenure systems impact on-farm investment decisions and cocoa productivity. The study also sought to document the modes of land acquisition by respondents and other issues including security of land/farm, relationship between farm owners and sharecroppers/caretakers and challenges affecting the Ghanaian cocoa farmer while collecting information on farmers' living conditions.

Several steps were taken before the formal field survey was conducted, including a review of existing literature and Rapid Rural Assessment (RRA). The RRA held group meetings and discussions with cocoa farmers--both landowners and sharecroppers--to identify the current land tenure situation and tenure-related constraints to cocoa productivity in four districts of the main cocoa production regions of the country. Respondents were selected communities from the Eastern Region – Fanteakwa District (Agyeikrom community), Ashanti Region – Atwima Mponua District (Betinko community) and Western Region – Sefwi Boako District (Aboagyekrom and Kankyiabo communities). Agyeikrom was selected because there was a well-organized farmer Association, operating under Fair Trade Cocoa, that was also familiar with the Cocoa Research Institute of Ghana's Social Science and Statistics Unit (SSSU) and was willing to participate in the discussions on land tenure in the cocoa sector. Also, they were mostly migrants from Kroboland that now own the farm lands that their forbearers acquired long ago providing rich insight into the methods of land acquisition and dynamics of migration into cocoa growing areas. The other communities were also chosen because they were farmer groups under the operational areas of the Cocoa Health and Extension Division (CHED) and were willing to meet the team.

The field survey was conducted between February and September 2016 in eleven cocoa districts in all seven cocoa growing regions in Ghana. The survey was a cross sectional study with pre-tested questionnaires used to interview a total of 1,761 famers who managed 3,900 farms. Respondents were selected using a multistage sampling technique. The clear majority of farm managers were male (74.8%) and 25.2% were female. Three-fifths of all farm managers were native to their communities, and 40% were migrants from mostly other parts of Ghana. Educational status was still challenging: 69.5% had only basic education and 22.5% were illiterate. About 92% of the respondents indicated cocoa farming as their main occupation. Results from the formal survey further indicated various tenurial arrangements on the 3,900 farms managed by respondents. A total of 62.7% of farms were managed by their owners, while a lesser percentage fell under customary arrangements—22.7% *abunu*, 14.5% *abusa*, and 0.1% renting. About 50% (1,950) of all cocoa farms belonging to respondents were measured with a Geographical Positioning System (GPS). The other half were not measured with GPS, but respondents had fair idea about their farm sizes. It is worth noting that many farmers reported managing multiple cocoa and other crop farms or plots. Only 33% of respondents reported having one cocoa farm to manage in contrast to the majority (a total of 67%), who reported managing more than one farm. Indeed, some reported managing up to seven different cocoa farms located at different places. Also, the majority (a total of over 80% indicated having two to six non-cocoa farms to manage in addition to their



cocoa farms to supplement their livelihood. Approximately one-fifth of respondents (19.8%) reported not having any non-cocoa farms under management. While the presence of non-cocoa farms helps, farmers obtain additional income and may serve as source of food for the household, it also has implications on gender roles within the household and on the allocation of productive resources such as finance, time and other resources for effective and efficient farm management.

The majority (72%) do not have formal documents covering their land transactions although they reported to have full control of the land and this land was not in dispute as at the time of the survey. While land tenure is not viewed as a major obstacle to cocoa farming, farmers reported lack of legal documentation (32.1%), disputes between sharecroppers and landowners (21.1%), and the high cost of land levies by landowners as the three most important challenges. Land disputes are a relatively rare occurrence and 94.8% of respondent reported never having experienced a land dispute. Of those that did report disputes, family encroachment and inter/intra-family conflicts were the most common. Not surprisingly given the high level of family-related disputes, 72.6% of those who reported disputes found appropriate means for resolution, through either the family/clan (50.6%) or the chief/elders (34.9%).

Approximately 71% of the household owned their cocoa farms. When broken down by tenure type, the study revealed different productivity estimates. *Abusa* tenure arrangements reported the highest estimated yield at 372.4 kilograms per hectare (kg/ha), while *abunu* arrangements reported the lowest estimated yield of 214 kg/ha. Surprisingly, farmer owners fell in between the two with an yield estimate of 353.9 kg/ha. The reasons for these differences warrant future research. Respondents who had full rights over their land had higher yield estimate over those with only partial right. This suggests that security of land is an important factor in farmer productivity. Partial right is a situation where a farmer has only use but not full control over decisions on either the cocoa trees or the land.

The study also sought to review means of land acquisition in the cocoa belt of Ghana. The survey found a plurality of farmers (25.1%) acquired lands by engaging in the *abunu* sharecropping system. This was followed by 24.8% who acquired their land as a gift. A further 22.6% acquired land through inheritance and 10.9% through family land. The most likely heirs to the farms were members of the nuclear family namely: sons (24.2), children (22.3%) and wife and children (19.1). Twenty-one percent of respondents mentioned other close relatives. Generally, there was availability of land for cocoa cultivation to purchase in the communities surveyed. However, it is indicative that virgin forests are mostly unavailable as indicated by 64.3% of the respondents. Old cocoa farms were perceived as the most expensive land to purchase whereas land for food crop cultivation is the cheapest.

Investment decisions (with respect to replacement of old trees, purchase of improved inputs, and equipment purchases) were, as expected, made by the farm owners on owner-managed farms. This was not the case for sharecropper-managed farms. Over 56% were confident or strongly agreed that neither the government nor any investor can take their farm lands without negotiating fair compensation. Over 70% believed that it was highly unlikely or impossible that people from neighboring villages would encroach or cross over to use any of the fields that they (respondents) own in the next three years. This is despite the clear majority (72%) of respondents not possessing legal document on their land transactions.

The processes and procedures for registering customary land rights and interests through the formal land administration system are tedious and very expensive and hence prohibitive for most smallholder farmers. This study recommends that Ghana COCOBOD, in collaboration with the Lands Commission,

design a simple, sustainable, and affordable land administration system for customary land registration, which is legal under Ghanaian laws to provide land tenure security to cocoa farmers. Given that an estimated 80% of land in Ghana is under the control of customary authorities (Sarpong 2006; Ubink and Quan 2008) and that the clear majority of Ghana's land is used for agricultural production, this system should be linked to the Customary Land Secretariats (CLSs) as established by the Land Commission under the Land Administration Project Phase 2 (LAP2). Per the LAP2, a total of 81 CLSs have been established on a pilot basis and plans are underway to scale these up in all rural areas of Ghana. The report recommends that Ghana COCOBOD should, through its Cocoa Health and Extension Division (CHED), spearhead the implementation of simple farm registration system with support from the land agencies and other private sector operators with technologies in land survey and mapping. Such a system could rely on both existing land surveys and new surveys conducted by CHED extension agents equipped with modern and inexpensive mapping technology to demarcate and register uncontested cocoa farms with CSLs.

At the same time, this report recommends that Ghana COCOBOD should provide CHED with more resources (especially, more GPS devices, training and personnel) to adequately conduct systematic GPS mapping of cocoa farms in Ghana. This will provide a means to demarcating all cocoa farms and farm boundaries and linking farmers' bio-data with their measured farms as well as providing a basis for calculating seasonal input requirements for both agro-chemicals and new planting material. Furthermore, CHED should go a step further by providing individual site plans to farmers whose farms have been measured. This will ensure that farmers have documents and a fair idea of the sizes of their farms to help in their investment decisions. Farmers could also be encouraged to register their farms lands and help partially meet the costs for the development of the site plans after farms are duly measured since this would help secure their land tenure and improve their farm management practices.

Ghana COCOBOD, in consultation with land tenure experts, should consider innovative pilot schemes designed to test incentives and approaches that would help to reconcile long-term recapitalization of old and/or diseased cocoa farms with the realities of tree tenure laws in Ghana. When *abunu* and *abusa* arrangements specify that land automatically reverts to the owner upon the felling of trees, one approach might be to consider an arrangement with different levels of sharing of proceeds during the "renovation and rehabilitation phase" of a farm and a different level of proceed sharing across the productive life of the new farms. This effort could also begin to lay the foundation for using land title as loan collateral against which farmers could present their titles and deeds to receive much needed credit to purchase improved inputs and access other professional farm services such as spray service provision and pruning services, among others.

## INTRODUCTION

Agriculture is vital to the Ghanaian economy, employing 45.3% of the country's population and contributing immensely to Gross Domestic Product (GDP). In 2014, it contributed 21.5% to GDP and an average of 25.6% between 2009 and 2014 (ISSER, 2014). The crops sub-sector made the most contribution (16.8%) to the agricultural sector's share of GDP. Cocoa continues to be a major player, and a major foreign exchange earner for Ghana's economy contributing 2.2% of the agricultural sector's share to GDP (ISSER, 2014). In addition, cocoa supports the livelihood of over 800,000 farm families in Ghana and millions of others along the cocoa value chain. Anthonio and Aikins in 2009 indicated that the livelihood of about six million people that is (from 25% to 30% of the population) is dependent on the cocoa sector. Also, in most cocoa producing households in Ghana, cocoa accounts for over 67% or more of total household income (Kolavalli and Vigneri, 2011, Asamoah et al. 2013), signifying the importance of cocoa to rural families.

Ghana is presently the world's second highest producer of cocoa beans, after Ivory Coast, with average total annual output of around 800,000 metric tons (MT). Cocoa production takes place in six out of the ten regions of Ghana with the Western region accounting for over 50 percent of total cocoa production (Ghana Cocoa Board, 2012). Indeed, cocoa production has been fundamental to Ghana's economy for a very long time and will likely continue to be a key player in development in the foreseeable years; thus, any significant reduction in production will have deleterious effect on Ghana's economy.

Per Opoku Ameyaw et al (2010), majority of cocoa farmers in Ghana operate on small scale with average farm sizes of two to three hectares with less than 10 percent of cocoa farmers operating on large scale. Ghana's estimated average cocoa yield is around 400 kilograms per hectare (kg/ha) for small scale producers (Opoku Ameyaw et al. 2010) which falls below that of other producing nations' such as Cote d'Ivoire and Indonesia with estimated yield of 1.4 tons and one ton per hectare, respectively (World Bank, 2011). Many factors underscore this low productivity including scientific and technical issues such as the soil fertility status and quality of planting materials as well as diseases and pest issues. Small scale mining, whether legal or illegal, also have a great toll on arable lands. For instance, it is estimated that, about 40% of the world's terrestrial vegetation had been removed and exchanged for mineral exploration, exploitation as well as infrastructural development (Myers et al., 2000). In Ghana, mining activities coupled with other anthropogenic disturbances is believed to be responsible for an annual loss of 22,000 hectares of the existing forest cover (EPA, 1996). Furthermore, there are devastating consequences of vegetation clearance on soil ecosystems which in turn affect cocoa productivity. Apart from the fact that vegetation clearance exposes the soil to higher temperatures, it also depletes the soil nutrient level which is ironically required for the growth of vegetation (FAO, 1993).

Aside these afore-mentioned challenges to productivity, many other socio-cultural and economic factors also explain Ghana's low cocoa productivity. Among them is the issue of land tenure arrangements and security that directly or indirectly impact on farmers' attitudes and investment decisions in cocoa production and systems. Land indeed, is a critical productive economic resource in agriculture, grazing, forestry, fishing and mining (Roy and Chakroborty, 2010) and in cocoa cultivation particularly. It is a foundation of social prestige and regarded as the basis of wealth and political power (Roy and Chakroborty, 2010). Per the 2010 population and housing Census, 49.1% of the total population of Ghana is found in rural areas as against 56.2% in the 2000 survey (GSS, 2012, 2002). Since most rural inhabitants depend mostly on primary land activities for their sustenance issues regarding land use and



forest tenure policies, as well as arrangements between landowners and sharecroppers are important to them and are sometimes identified by farmers as major constraints to low productivity (Personal communication during farmer outreach discussions) that needs to be addressed.

To address this, it is important to have information that provides insight into the specific land tenure arrangements, contracts and other socio-cultural issues in the cocoa cultivation landscape in Ghana. In 2012, the Cocoa Research Institute of Ghana (CRIG) initiated such a study (titled 'land tenure systems and their effects on cocoa production in Ghana – Project code CRIG/CC/02/03) with a planned sample size of 2,000 cocoa farmers. Unfortunately, only 300 hundred questionnaires were administered due to some administrative issues.

However, due to the importance of such information, the United States Agency for International Development (USAID) and the World Cocoa Foundation African Cocoa Initiative (WCF/ACI) signed a Memorandum of Understanding (MOU) to collaborate with CRIG to undertake a large-scale study on impact of land tenure on cocoa production in Ghana, building on the previous questionnaire used by CRIG. The view was to have enough information on cocoa farmers' socio-economic characteristics including land tenure arrangements, farmers' investment decisions, farm maintenance practices and modes of land acquisition. The study also sought to investigate other issues on attitudes, security of cocoa farm lands, farmer productivity, challenges and farmers' conditions of living with respect to the ownership of some household durables. The significance of this study lies in formulating appropriate interventions that can secure land/ cocoa tree tenure as well as the livelihood of cocoa farmers in Ghana.

### **SPECIFIC OBJECTIVES**

- Investigate the land tenure system as it pertains to the production of cocoa in Ghana.
- Assess the various land tenure arrangements and on farm investment decisions and cocoa productivity.
- Assess respondents' security of land tenure, challenges associated with land tenure, cocoa production and other socio-economic challenges.
- Understand farm owner-sharecropper production relationships, attitudes, inter and intra family and community boundary issues on cocoa farms.
- Gather data on respondents' living conditions using ownership of various household durables as indicators of household conditions.

### **BACKGROUND ON LAND TENURE ISSUES IN GHANA**

Land is a key economic resource in the production of cocoa. Per the Ministry of Land and Forestry (2003), there are different types of land tenure systems and land holdings, acquisition, use and disposal of land in Ghana. These forms vary from region to region and between ethnic societies. The various types of interests held in land are obtained either from Ghanaian customs and traditions or assimilated from English Common Law and Equity. Per the Ministry of Land and Forestry (2003), land administration in Ghana is governed by both enacted legislation and customary practices. They recognized five different

types/forms of interests in land which are used in Ghana namely the Allodial interest, Customary Freehold, Common Law Freehold, Leasehold including subleases and Customary Tenancies.

**ALLODIAL INTEREST:** Per Centre for democratic Development (CDD) (2002), allodial interest is the highest proprietary interest known to customary law, and above which there is no other superior land title. It is occasionally referred to as the paramount or absolute title and has been likened to the freehold interest. Most of the other lesser titles or interests in land are derived from the allodial interest. Based on the customary law which is applicable, the allodial interest in land is originally held by stools, skins, *tendana*, sub-stools, clans or families (CDD, 2002). These entities are perceived as custodians who hold land in trust for members of their community made up of living members, the dead, and those to come). The allodial interest is vested in the hands of the head of the group that owns the land who manages it in the interest of the community with the consent and concurrence of the principal members of the community (Ministry of Land and Forestry, 2003). Only indigenes can hold allodial title to land. This interest can be transferred from one owner to the other through purchase or gift to another community or individual.

**CUSTOMARY FREEHOLD:** Per the Ministry of Land and Forestry (2003), customary freehold is also known as the usufruct. This is an interest held as of right by members of the landowning community who acquire it by first cultivation or by allotment from the landowning group of which they are members. So long as this interest is held and exercised by any people who originally hail from the community, it assumes indefinite duration and prevails against the entire world including the allodial title holders. The customary freehold includes the right to occupy and obtain economic use from any part of the land which is communally owned and has not been previously occupied by any member of the community (Ministry of Land and Forestry, 2003). This means that the customary freehold (usufruct) can cultivate on the land, build or use the land in any way he/she enjoys if he does not invade the stool or state right to the minerals therein. The customary freehold is freely transferable and the freeholder may dispose of his interest both *inter vivos* or by testamentary disposition to members of the community as he pleases. Transfers to persons outside the group (strangers) may be done only by the holder of the customary freehold who must seek the consent of the appropriate head and principal elders of the landowning community (CDD, 2002). This is because such alienation to a stranger implies accepting an outsider to the ancestral heritage of the state, and extending birthright of citizenship.

**COMMON LAW FREEHOLD:** This is the type of interest that arises out of a grant in the form of a freehold that is made by the holder of the allodial title by way of sale or gift. This type of interest is held indefinitely and is derived from the rules of common law (Ministry of Land and Forestry, 2003). Formerly, members of the stool, family or skin, which holds the allodial title, strangers (Ghanaian citizens outside the allodial title holding community) and foreigners alike, could acquire common law freehold. However, non-Ghanaians' rights to hold such land interests were abolished and automatically reduced to a maximum 50-year lease term to be granted at any one time (1969 Constitution).

**LEASEHOLDS:** These are land rights which are granted to a person to occupy and use land for a specified term and subject to certain agreed covenants and the payment of an agreed rent. The holder of the allodial title, customary freehold or common law freehold may grant a lease in respect of land over which he/she has not already granted to another person (Ministry of Land and Forestry, 2003). The title holders may enter a formal leasehold agreement for up to 99 years with other Ghanaians, and up to 50 years with foreigners. Leaseholds are generally entered into by settlers.

**LESSER INTERESTS/CUSTOMARY TENANCIES:** With this interest, holders of an allodial title, customary freehold or common law freehold may also formulate various lesser interests under customary law. These are usually sharecropping contractual arrangement in which a tenant farmer gives a specified portion of the produce of the farm to the land owner at each time of harvest (Ministry of Land and Forestry, 2003). In Ghana, the two well-known of such tenancies are the ‘*abunu*’ and ‘*abusa*’ sharecropping arrangements. Access to land for cocoa farming thus depends on one’s status, either as an indigene or a settler/migrant. Typically, an indigene has his/her lineage traditionally owning the land in question while a settler or migrant uses other traditionally accepted means to gain access to farm lands including sharecropping.

Sharecropping arrangements are pervasive in the cocoa sector. While arrangements are quite varied and flexible, they can generally be broken down into *abunu* (50:50) and *abusa* (one-third share to the farmer-tenant and two-thirds to the land-owner). Under an *abunu* arrangement, the sharecropper brings the entire farm to maturity within a specified period say seven to twelve years. Once the farm matures, it is divided into two between the sharecropper and the landlord. Traditionally, after the sharing, the land and the trees on it becomes the property of the sharecropper and the sharecropper has the right to bequeath it as property to his posterity.

However, in recent times, anecdotal information (Mercy Asamoah, Personal communication with cocoa farmers) show that in the event of the cocoa trees being felled or destroyed by natural or artificial disaster, including deliberate cutting for rehabilitation, the land reverts to the landowner. This is a situation which has serious implications for cocoa swollen shoot virus disease (CSSVD) control and farm rehabilitation. The reason is that once a cocoa farm becomes infected by CSSVD or the farm is aged and unproductive (over twenty-five years and more), current CRIG-recommendation is that the diseased trees are removed together with their apparently healthy neighbors that is known as cutting-out and replanted with approved hybrid planting material which are resistant to the disease (Owusu Domfeh et al 2008). However, if the land owner does not agree or fails to understand, he/she may request the land to be reverted to him/her. Hence, some sharecroppers do not want to grab disease trees completely or rehabilitate over aged and unproductive cocoa farms to lose the land even though they may appreciate the concepts of cutting-out and rehabilitation.

Under the *abusa* arrangement, a landowner establishes a farm, and a sharecropper, usually called a caretaker is responsible for farming and maintaining the entire farm. The sharecropper keeps one third of the crop proceeds, while the land owner keeps two thirds. In some other flexible cases, the arrangement is for the land owner to keep one third while one third of the proceeds is used to finance the purchase of inputs for farm maintenance. The caretaker has no ownership rights over the land or farm, and his contract can be terminated at will and at short notice by his owner, (Mercy Asamoah, Unpublished). It should be noted here that the different permutations of sharecropping and caretaker arrangements are context and locality-specific, and are changing quickly in the face of increased land pressures from competing land uses (such as mining and commercial agriculture) and land fragmentation. Importantly, while sharecropping systems have traditionally been used by settlers, indigenes can use sharecropping arrangements to farm additional parcels of land, other than those allocated to them by the stool. For example, a member of the stool can access one parcel of land through customary freehold title, and another as a sharecropper/caretaker. This practice is becoming more prevalent in recent times as pressure on land increases and availability of land decreases (Mercy Asamoah, Personal communication).

Land security is found to have correlation with investment, productivity and standard of living. Alufa (2015) noted that insecure land tenure is one of the basic challenges that rural households face. In Ethiopia, Deininger and Jin (2006) showed that households that had recently experienced land redistribution were more likely to invest in tree planting that is a security enhancement measure rather than making productivity investment such as terracing. Low investments were seen with households that showed expectations of future redistribution. Security of tenure is a precondition for intensification in agriculture, better natural resource management and sustainable development (Roth and Haase, 1998). Intensification requires the purchase and optimal use of yield enhancing input such as fertilizers and medium to long term investment such as constructing an irrigation system. Thus, land security only enhances farmers' motivation for doing intensification in anticipation of good returns on investment. In his contribution to the debate, Adams (2001) argued that land security affects households' utilization of resources positively which in turn affect standard of living. On the other hand, if tenure becomes insecure, the standard of living declines because the household becomes less productive due to a relocation of household income and labor into other activities that may not yield as much dividend as investing in long term investment such as in tree crop farming. The behavior of Ghanaian farmers in terms of investment depends on the security of land (Migot – Adholla et al. 1991). Thus, farmers are more likely to make improvements on the lands they own or have long term use rights, than lands they have access to under short term rights. In comparing Ghanaian to Kenyan farmers, Migot – Adholla et al. (1991) realized that the latter reports higher security of land tenure and, in turn, a greater willingness to invest in their holdings.

Per Ertiro (2006), land tenure security has an influence on farmers' decision to adopt conservation measures by influencing the length of farmers' planning horizon and sense of responsibility. Farmers would not invest in soil conservation measures when the land is insecure due to the fear that the benefits of the soil conservation would not accrue to them (Valk and Graff, 1995). Bekele (1998) also found a negative association between land tenure insecurity and farmers' decision to retain conservation structures on their field. This background literature underscores the need for a survey to document information on land tenure and cocoa production in Ghana.

## **RESEARCH METHOD**

This study is a collaborative work between Cocoa Research Institute of Ghana (CRIG), United States Agency for International Development (USAID) and World Cocoa Foundation (WCF).

On a technical level, the Social Science and Statistics Unit (SSSU) represented CRIG while the Land Tenure and Resource Management Office represented the USAID. Mr. Sona Ebai, Chief of Party and Mr. Takyi Sraha represented WCF/ACI. Several steps were taken to gather the information for this report. These included a desk study, Rapid Rural Appraisal (RRA) and a formal survey among cocoa farmers.

**DESK STUDY:** Prior to the RRA, the Team conducted a desk study to obtain a comprehensive review of land tenure-related constraints in Ghana's cocoa sector, as described in relevant literature; current programs and initiatives addressing land/tree tenure, agro-forestry practices and land use; and current programs targeted at the cocoa sector, which could have synergies with land tenure programming.

**RAPID RURAL APPRAISAL (RRA):** The RRA was conducted from 14<sup>th</sup> to 23<sup>rd</sup> April, 2015 with large farmer groups of between 30 and 60 farmers. Meetings were also held with public and private sector stakeholders to identify current land tenure situation with respect to cocoa, the tenure-related

constraints to cocoa productivity, as well as possible interventions that will align incentives towards increased productivity. The team also conducted rapid assessment using group meetings and focus group discussions with cocoa farmers and landowners to identify current land tenure situation and tenure-related constraints to cocoa productivity in selected communities in the three regions as follows:

- Eastern Region – Fanteakwa District (Agyeikrom community)
- Ashanti Region – Atwima Mponua District (Betinko community)
- Western Region – Sefwi Boako District (Aboagyekrom and Kankyiabo communities)

This interaction with farmers during the RRA, offered useful ideas that helped in the revision of the questionnaires used for the formal survey such as the various tenurial arrangements that existed which helped to provide options on the questionnaire. The RRA was followed by a formal survey with cross sectional design using pre-tested questionnaires. Pre-testing was done with selected farmers at Akooko, Nkronso, Agyapomaa and Bomponso in the Tafo/Kibi cocoa district. The aim was to check errors, ambiguities, consistencies and phraseologies in the questionnaire.

**FORMAL SURVEY:** Following the pre-testing, a formal field survey was conducted. A total of 1,761 respondents were interviewed within the month of February, and from June to September, 2016 (see Appendix I for the survey regions and cocoa districts with their corresponding number of respondents interviewed.).

## **STUDY AREAS**

A map of the survey area is indicated as Appendix 3. The main economic activities in the survey communities included farming, petty trading, artisanal and small scale mining activities. Key food crops grown in most of the places were maize, cassava, yam, rice, plantain and cocoyam.

## **SAMPLING DESIGN**

To select the respondents, a multistage random sampling technique was used with districts, villages and farmers being the stages of the sampling. Eleven out of a total of sixty cocoa districts demarcated by CHED were randomly sampled using statistical software, 'R'. Within a district, five communities were randomly sampled from the lists provided by the district cocoa officers. Where farmers' lists were available, the 'R' software was used again to randomly select 30 to 36 respondents for interviewing in each of the five communities per district, leading to a total sample size between 150 and 180 respondents per cocoa district in the 11 districts selected. Where farmers' lists were not available, all cocoa farmers in the selected communities were assembled using the local information systems. From the gathering, 36 farmers were selected through a lottery-like ballot using cards marked with 'Yes' for selected and 'No' for non-selection. Indeed, the team observed that this method of selection was adjudged to be more participatory, transparent and satisfactory to the farmers than the selection made by us with the statistical software from farmer lists sent to us by the district CHED officers. Each interview took between 30 to 60 minutes to complete depending on the number of farms and the level of aptitude/receptiveness of the respondent. Once communities were pre-selected, all effort was made to reach the farmers irrespective of challenges associated with them. The survey instrument (questionnaire) contained various questions to provide information on the following topics:

- Demographic information
- Farm level characteristics
- Farm investment and documentation
- Owner/sharecropper relations
- Land disputes
- Attitudes towards land tenure issues
- Challenges in managing cocoa farms
- Other sociocultural influences on cocoa farming
- Household standard of living

The survey instrument (questionnaire) is attached as Appendix 4. Data was descriptively analyzed using Statistical Package for Social Sciences (IBMS SPSS) and presented in tables and charts as appropriate. Chi-Square and Analysis of Variance (ANOVA) were used to test some relationships and associations between land tenurial arrangement, control/security and cocoa productivity. Productivity of respondents was also analyzed based on tenure arrangements using general linear modeling.

## **CHALLENGES**

Some difficulties were faced which, though, did not affect the quality of data, yet, posed challenges to the team during the field survey. These are those related to the field staff, the sampling technique and administrative in nature.

### **CHALLENGES FACED BY THE SURVEY TEAM**

These included cases of language barrier, poor and slippery roads, waiting for a long time to get respondents from their farms due to poor communication and commitment of farmers to duty. The language barrier was pronounced mainly in the Volta region (Geyevu and Poase Cement, to be specific, where respondents could understand only their local dialect, and thus the team had to rely on the few members that could interpret the interviews from English to Ewe and vice versa. This caused undue delay to team operations. Also, due to the rainy season at the time of the survey, some roads were slippery, rough and difficult to use, while some selected communities were far from the residence of the Team making traveling stressful (see Challenges associated with the sampling technique).

Since the Survey followed the random sampling technique strictly, not all members in the farmer associations had the opportunity to be interviewed. This caused displeasure among non-selected farmers. Many farmers perceived the Survey as an opportunity to have their individual challenges addressed and did not understand why they should not have a say in the interviews. Moreover, the non-selected farmers did not receive any incentive. Indeed, the survey had coincided with the government of Ghana's free distribution of inputs to cocoa farmers and thus, some of the non-selected thought they



would be disadvantaged if their names were not captured on the interview list. The team had to enhance its rapport techniques to be able to overcome these misperceptions.

### ADMINISTRATIVE CHALLENGES

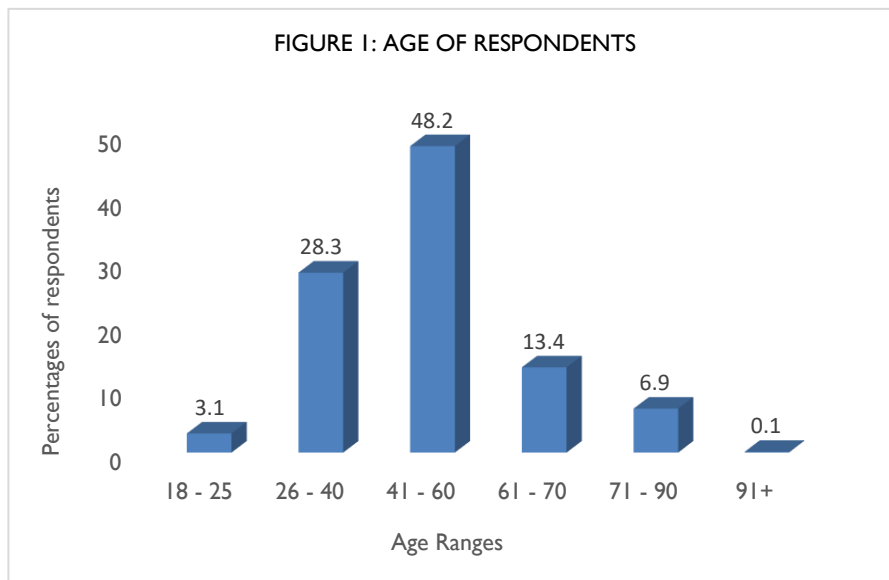
There were challenges associated with the delays in accessing funds for the field work due to slow moving bureaucratic processes among partners. Fieldwork was scheduled to start in February, however, delays in the release of and access to project funds paused fieldwork between June and September 2017. These challenges provide food for thought as to the success of future field work and ability to meet reporting deadlines.

# RESULTS AND DISCUSSIONS

## I. DEMOGRAPHIC INFORMATION

### I.1 AGE

The mean age of respondents was 48.8 years ranging between 18 and 130 years (while filtering two outliers which were 102 and 130). The two centenarians were Obaapayin Akua Donkor, a supposed 130-year migrant staying at Pokukrom in the Dunkwa cocoa district in the western south region. The other respondent was Opanyin Kwadwo Sebey, a 102-year native of Etereso in the Bewkai cocoa district in Ashanti region of Ghana. The team



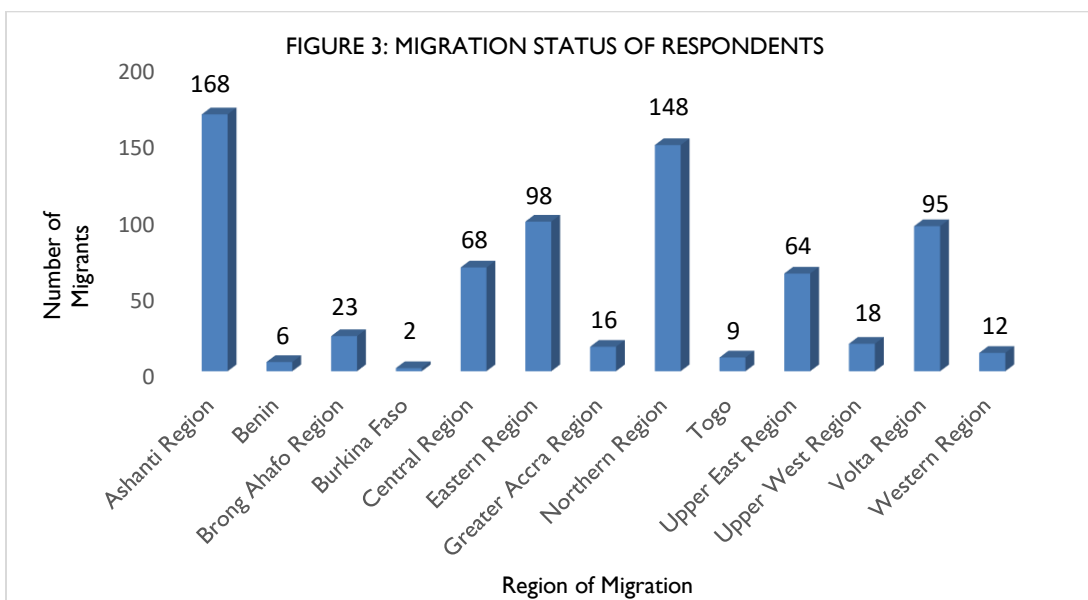
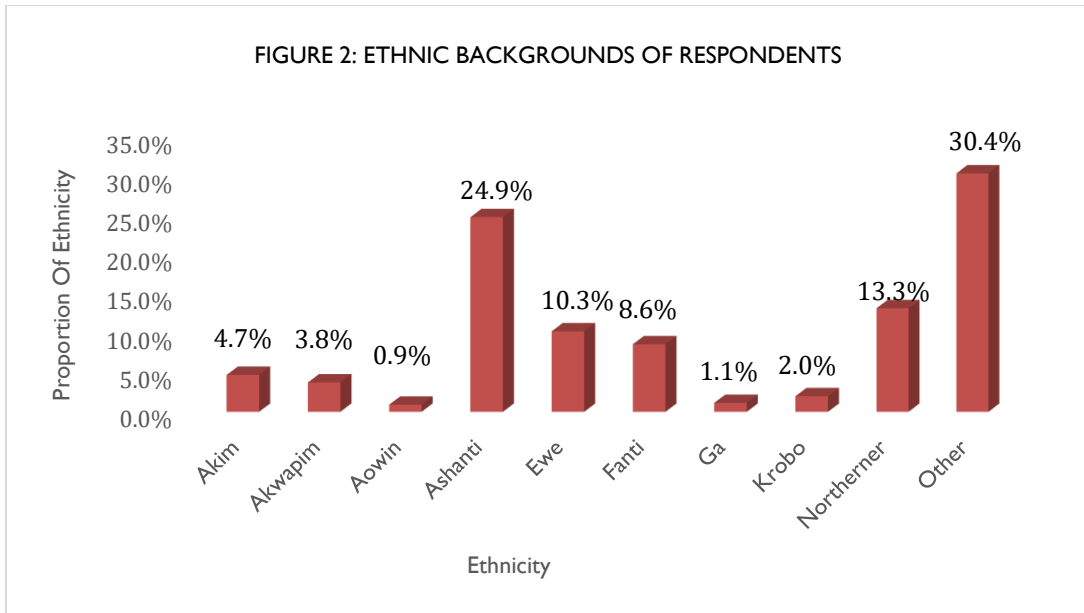
interviewed them because they were sampled and they wanted to speak for themselves irrespective of their ages which the team could not confirm. The results further showed that a little more than a third of the respondents were young (between the ages of 18 and 40 years), while about 62% could be described as middle aged (41 -60 years) and about 21% being classified as aged (i.e. more than 60 years old) (Figure 1).

### I.2 SEX

Most respondents (74.8%) were males while 25.2% were female (Table 1). About 86% of the total respondents were heads of their household, and most of those (73.1%) were men. These facts confirm the dominance of men within cocoa sector households in Ghana. Respondents had an average of about 12 years up to a maximum of 70 years' experience as cocoa farmers.

### I.3 MIGRATION AND ETHNICITY

Respondents came from varied ethnic backgrounds mostly Ashanti region (Figure 2). In terms of migratory status, 58.9% were natives (Table 1); the rest were migrants from within Ghana and a few (17 respondents) from neighboring countries namely Togo, Benin and Burkina Faso (Figure 3).



#### I.4 EDUCATIONAL STATUS

The results confirmed that most cocoa farmers in Ghana are either illiterate (22.5%) or have only up to basic level education (primary to middle school) (69.5%) as expected. Only about 6% and 2% had secondary or tertiary level education, respectively (Table I). Low level of education has implications for ensuring that lands are properly documented for its security. Indeed, in the RRA conducted by the team, most of the farmers expressed little appreciation for the importance of documenting farms and/or tenure arrangements at the point of entering into a farming relationship with sharecroppers or caretakers in order to avoid disputes.

## I.5 MARITAL STATUS

A large majority (77%) of respondents were married; the rest were widowed, divorced, single or cohabitating (Table 1), but the study did not explore whether the marriages were monogamous or polygamous in nature.

**TABLE 1: GENERAL DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS**

CHARACTERISTIC	DETAIL	FREQUENCY	PERCENTAGE (%)
Gender	Male	1,318	74.8
	Female	443	25.2
Residential status	Native	1,037	58.9
	Migrant	724	41.1
Education level	None/Informal adult education	397	22.5
	Primary school	347	19.7
	Junior high/Secondary school	368	20.9
	Middle school	509	28.9
	Secondary school	103	5.8
	Tertiary	37	2.1
Marital status	Married	1,356	77
	Widow/widower	145	8.2
	Divorced	106	6
	Single	89	5.1
	Cohabitation	65	3.7
Household head?	Yes	1,519	86.3
	No	242	13.7
Household head by gender	Male	1,287	73.1
	Female	232	13.2
Primary occupation	Cocoa farmer	1,614	91.7
	Food crop farmer	54	3.1
	Artisan	32	1.8
	Other (mining, tree crop farming, purchasing, transportation, etc.)	31	1.8
	Trader	21	1.2
	Civil servant	9	0.5

Total: 1,761 farmers, Source: Survey data, 2016

**I.6 MAIN OCCUPATION AND CONTRIBUTION OF COCOA TO LIVELIHOOD**

About 92% of the respondents indicated that cocoa farming was their main occupation (Table 1). Additionally, the majority (about 95%) were engaged in other economic activities including food and other cash crop farming, artisanal jobs, and petty trading to supplement their incomes. Less than one percent had formal sector employment as their main occupation.

Cocoa contributed an average of 62% and a mode of 80% to respondents’ household income. Indeed, Table 2 shows that cumulatively, 79.6% got at least 50% of their household income from cocoa farming (Table 2). This signifies the importance of cocoa to farmers’ livelihoods and corroborates an earlier study conducted by Asamoah, et al (2013) where cocoa was the main source of income for over 94% of respondents.

**TABLE 2: COCOA AS A % OF TOTAL HOUSEHOLD INCOME**

RANGE (%)	FREQUENCY	PERCENTAGE (%)
<50	358	20.3
50-69	515	29.3
70-100	888	50.4

Total farmers: 1,761, Source: Survey data, 2016

**I.7 HOUSEHOLD SIZE**

Respondents’ households ranged in size from one to 26 members. The distribution shows that most respondents had larger households between five to twelve members (Table 3).

**2. FARM LEVEL CHARACTERISTICS**

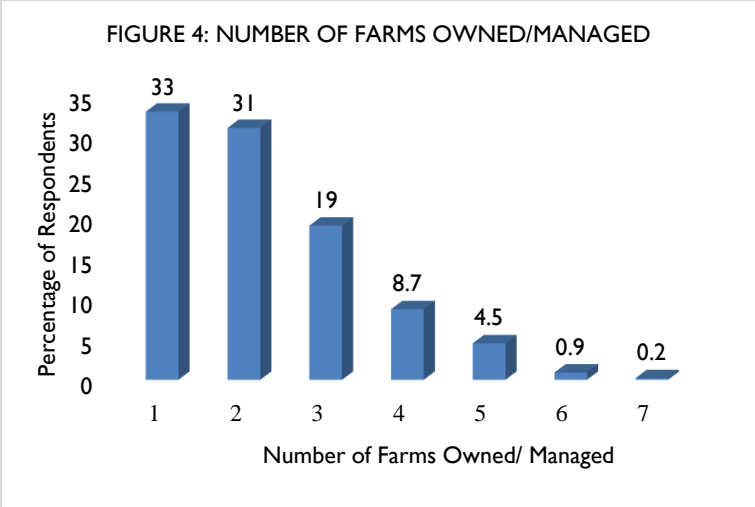
**TABLE 3: DISTRIBUTION OF HOUSEHOLD SIZE**

RANGE OF TOTAL HOUSEHOLD MEMBERS	FREQUENCY	PERCENTAGE (%)
1	63	3.6
2-4	381	21.6
5-7	740	42
8-12	513	29.1
13-17	57	3.3
18+	7	0.4

Total farmers: 1,761, Source: Survey data, 2016

**2.1 NUMBER OF FARMS MANAGED BY RESPONDENTS**

Results showed that respondents had between one and seven cocoa farms to manage themselves or under the care of sharecroppers. Most respondents had between one and three cocoa farms (Figure 4).



Respondents usually operated under multiple tenurial statuses and arrangements. For instance, a farmer could be an owner operating the cocoa farm him/herself while he/she is a sharecropper on another farmer’s farm or has a tenurial relationship with another person who is maintaining his/her farm in his or her stead (Table 4). Thus, out of a total of 3,900 cocoa plots recorded, about 63% were managed by the plot owners, while 22.7% and 14.5% were under *abunu* and *abusa* sharecropping

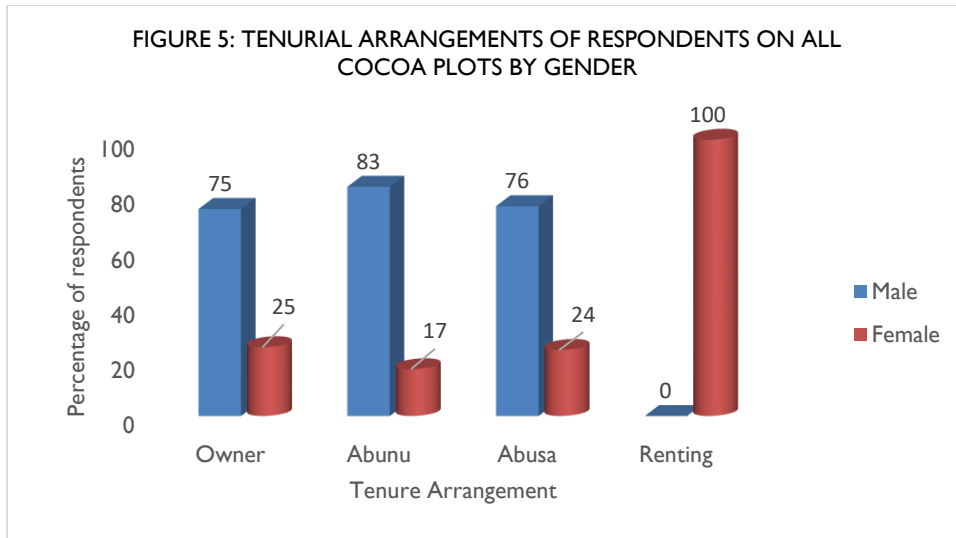
arrangements, respectively. Three respondents cultivated cocoa under other arrangements such as renting (Figure 5). The gender distribution of these tenurial statuses indicate male dominance across all the statuses except for renters, who were all female. It is not surprising that most respondents were managing their farms themselves since about 80% of them were within the productive age group of between 18 and 60 years as showed above.

**TABLE 4: PARTICIPATION OF RESPONDENTS IN VARIOUS TENURE ARRANGEMENTS**

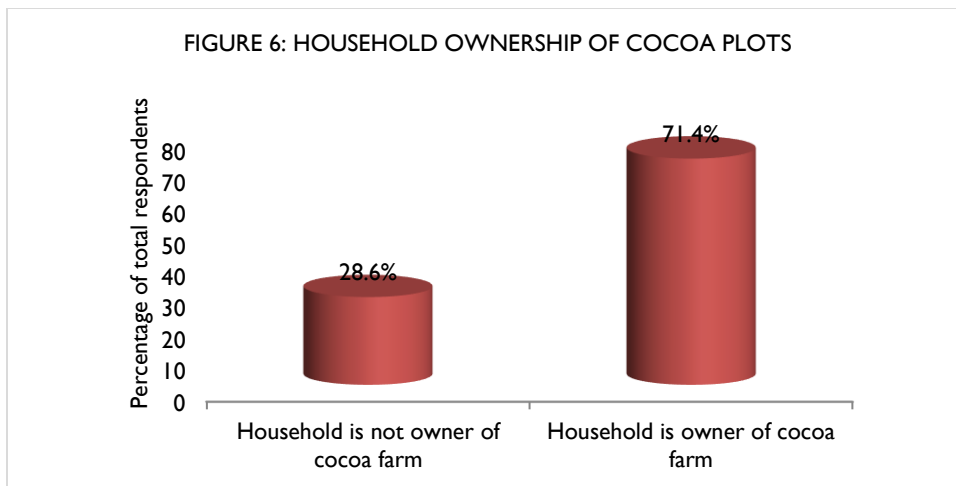
ARRANGEMENT	NUMBER OF PLOTS							TOTAL	PERCENT. (%)
	1	2	3	4	5	6	7		
Owner/operator	1,111	725	377	148	65	15	4	2,445	62.7
Abunu	387	275	139	64	19	3	0	887	22.7
Abusa	261	162	86	38	15	3	0	565	15.4
Renting	2	0	1	0	0	0	0	3	0.1
<b>TOTAL</b>	<b>1,761</b>	<b>1,162</b>	<b>603</b>	<b>250</b>	<b>99</b>	<b>21</b>	<b>4</b>	<b>3,900</b>	<b>100</b>

Source: Survey data, 2016





Respondents were asked whether their households owned the cocoa plots they worked. The overall picture showed that about 72% of the households were the owners of the plots in question. (Figure 8). The details of ownership of the individual plots are presented in Table 5.

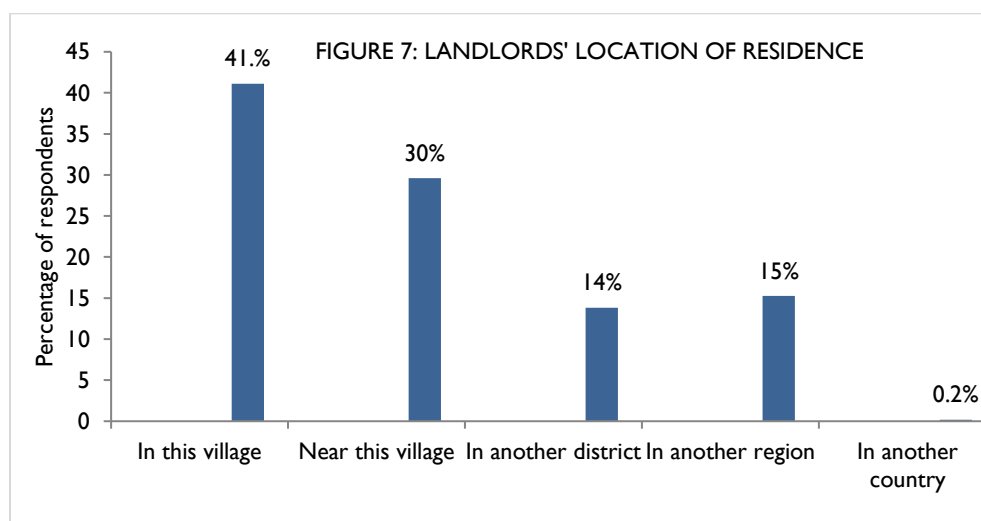


**TABLE 5: RESPONDENTS' USE OF COCOA PLOTS**

NUMBER OF PLOTS ("X")	NUMBER OF FARMERS WORKING AT LEAST X PLOTS	DOES THE RESPONDENT'S HOUSEHOLD ALSO OWN THE PLOT(S)?			
		YES	PERCENTAGE (%)	NO	PERCENTAGE (%)
1	1,761	1,253	71.2	508	28.9
2	1,162	829	71.3	333	28.7
3	603	428	71	175	29
4	250	175	70	75	30
5	99	79	79.8	20	20.2
6	21	18	85.7	3	14.3
7	4	4	100	0	0
<b>TOTAL</b>	<b>3,900</b>	<b>2,786</b>	<b>71.4</b>	<b>1,114</b>	<b>28.6</b>

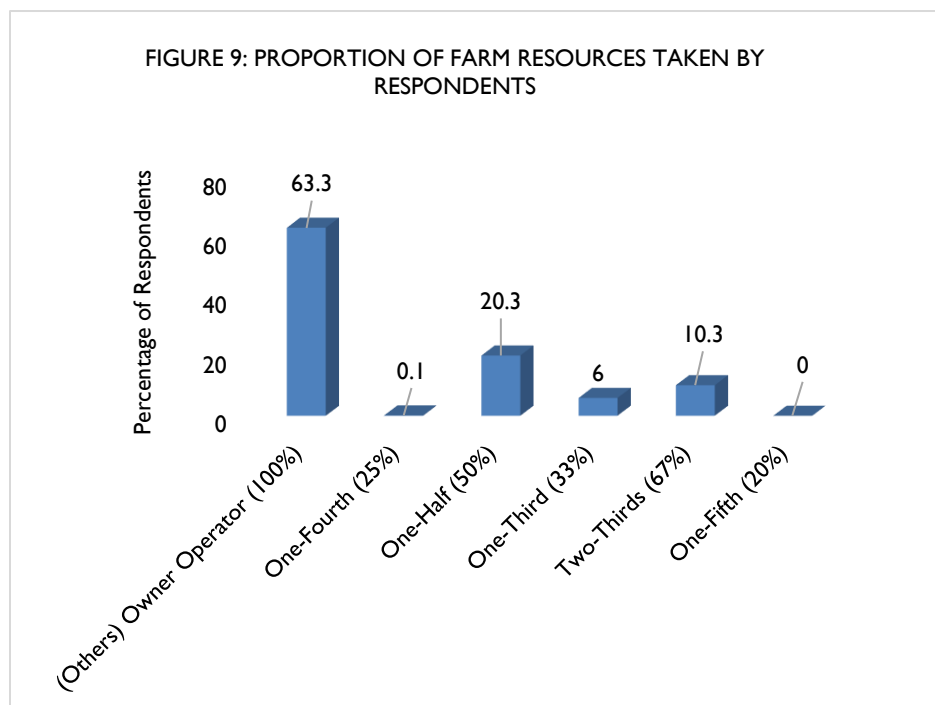
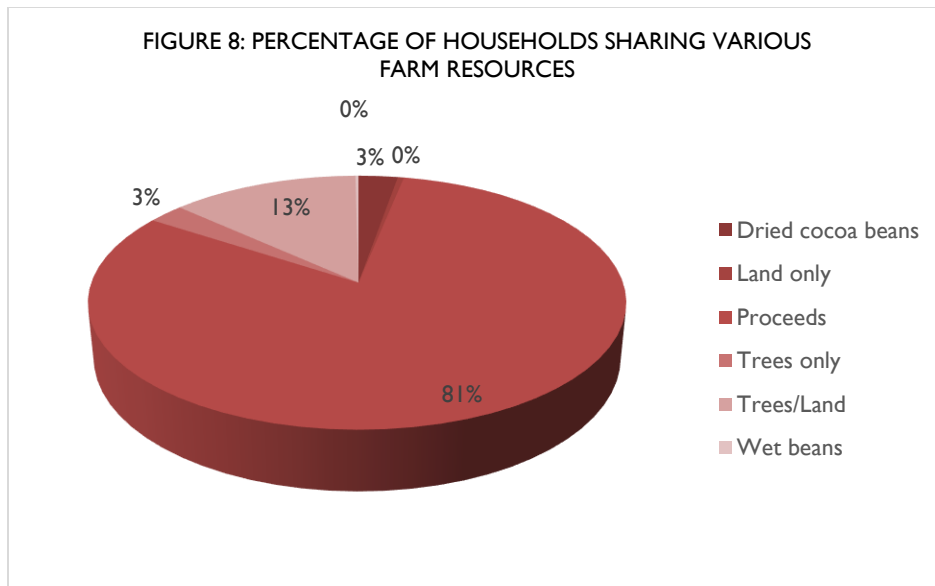
Source: Survey data, 2016

In most cases, the farm owners lived in the same village or nearby as the plot in question (Figure 9). About 15% lived in other regions or outside the country.



## 2.2 RESOURCE SHARING UNDER VARIOUS TENURE ARRANGEMENTS

Under the various land tenure arrangements, the majority (81.6%) shared income (proceeds) after the sale of dry cocoa beans, while about 13% shared trees/land (Figure 6). The other items shared are indicated in Figure 6.



The majority, (63.3%) of respondents were owner-operators and thus, shared with nobody. For those that shared, about 20% shared 50:50 (*abunu* sharecroppers), while others shared two-thirds to the owner and one-third to caretakers (*abusa* sharecroppers) (Figure 7). Apart from the sharing arrangements indicated above, about 9% of the 3,900 farm managers explained that there were other arrangements. For instance, where the farm has not been fully developed for an agreed period for sharing, usually between eight to 15 years, the sharecropper must give a third of the proceeds to the farm owner while he takes two-thirds to nurture the farms to full bearing or share it equally based on an agreement. Sometimes the share cropper takes all proceeds of food crops used to establish the cocoa farms. However, if the cocoa trees on the farms die or burnt, the entire farm land returns to the

owner and subject to re-negotiation if the owner so wishes. A few (<4%) had paid money to plot owners under a mortgage arrangement at the owner's request wherein the plot reverts to the owners after the full life of the cocoa trees (6-25 years). In certain other cases, the people maintaining the farms did so for their parents and/or siblings and decided how much to share with their parents. It was glaring, however, that under sharecropping arrangement, the land reverts to owners if there is any cause to believe that the sharecropper is unable to cultivate the farm within the agreed period or when there is dishonesty and laziness on the part of the sharecropper. Also, when the cocoa trees are cut for replanting, the plot may revert to the original owners if he/she does not approve of the replanting. This last point has serious implications for rehabilitation of aged and/or diseased cocoa farms.

## 2.3 FARM MEASUREMENT

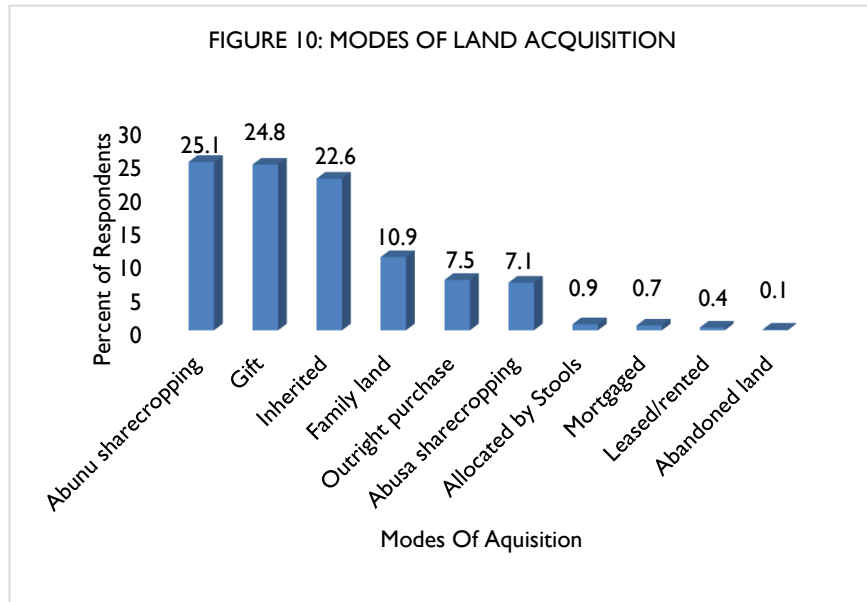
Respondents were asked whether their cocoa farms were measured with GPS or not. This was to help generate accurate information on the farm productivity of respondents. Results indicated that out of 3,900 cocoa farms recorded, about 50% (i.e. 49.5%) were measured with GPS instrument while 50.5% were not (Table 6). Among respondents whose farms were not GPS-measured, they could only guess or give perceived farm sizes, which usually results in poor estimates of actual size. Under the Government of Ghana's free supply of inputs such as cocoa seedlings, fertilizers and chemicals, CHED was mandated to measure beneficiary farmers' farms with GPS before supplying the inputs as part of the criteria. This does not necessarily mean that those farmers also received inputs, it merely highlights the fact that the measurement of farms was an essential criterion to ensure accuracy in the planned distribution. Of course, the GPS measurement by CHED had other intended benefits, including identification of Cocoa Swollen Shoot Virus Disease (CSSVD) infected farms and sectoring of the cocoa districts under CHED's operations. Although farmers were not given the site plans, they were informed about their accurate farm sizes while CHED offices kept the farm records.

NUMBER OF PLOTS ("X")	NUMBER OF FARMERS WORKING AT LEAST X PLOTS	TOTAL AREA (HA)	GPS MEASURED PLOTS		NON-MEASURED PLOTS	
			NUMBER OF PLOTS	TOTAL AREA (HA)	NUMBER OF PLOTS	TOTAL AREA (HA)
1	1,761	3,628.9	976	2,181.6	785	1,447.2
2	1,162	1,771.3	548	941.3	614	830
3	603	781.8	255	402.6	348	379.2
4	250	298.7	109	140	141	158.6
5	99	98.8	33	41.7	66	57.1
6	21	19.4	8	9.5	13	9.9
7	4	2.5	1	0.4	3	2.1
<b>TOTAL</b>	<b>3,900 plots</b>	<b>6,601.4 ha</b>	<b>1,930 plots</b>	<b>3,717.1 ha</b>	<b>1,970 plots</b>	<b>2,884.1 ha</b>

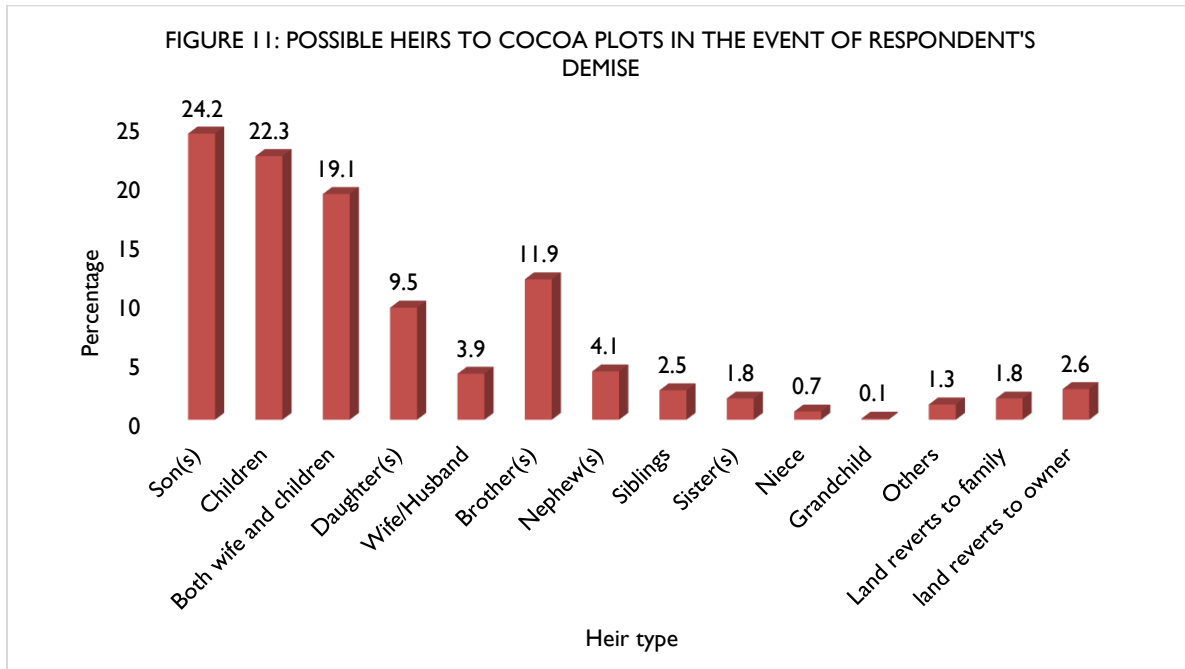
Source: Survey data, 2016

## 2.4 HOW COCOA PLOTS WERE ACQUIRED BY RESPONDENTS

Respondents were asked how they first acquired their cocoa farms. Results showed that the three most common modes were through *abunu* sharecropping, gifting from close relatives (such as father, mother, grand parents or spouse) or inherited through a matrilineal or patrilineal inheritance system (Figure 10). Apart from a few cases where the farm reverts to the family or land owner, most respondents showed



that their nuclear family members such as children, being it sons or daughters and their spouses are the rightful heirs to their farm property upon their demise (Figure 11). It is interesting to note that nine respondents inherited cocoa farms from their in-laws while eight received them as gifts from their friends.



## 2.5 OWNERSHIP OF NON-COCOA PLOTS

**TABLE 7: RESPONDENTS PER NUMBER OF NON-COCOA PLOTS**

NUMBER OF NON-COCOA PLOTS	NUMBER OF FARMERS	PERCENTAGE (%)
None	349	19.8
1-2	1,231	69.9
3-4	175	10
5-6	6	0.3
<b>TOTAL</b>	<b>1,761</b>	<b>100</b>

Source: Survey data, 2016

Aside of the cocoa farms, the results showed that respondents owned and managed other non-cocoa farms as part of their livelihood. Only 19.8% of the respondents did not have any other farm apart from cocoa. The rest had between one and six other farms located at different place (Table 7).

## 2.6 COCOA VARIETY PLANTED ON INDIVIDUAL FARMS

On the varieties of cocoa planted, the results showed that respondents cultivated mainly the hybrid and mixed hybrids (locally called Akokorabedi) on their various farms. Only a few did not know the type of planning materials used (Table 8).

**TABLE 8: COCOA VARIETIES CULTIVATED BY NUMBER OF FARMERS PER NUMBER OF PLOTS**

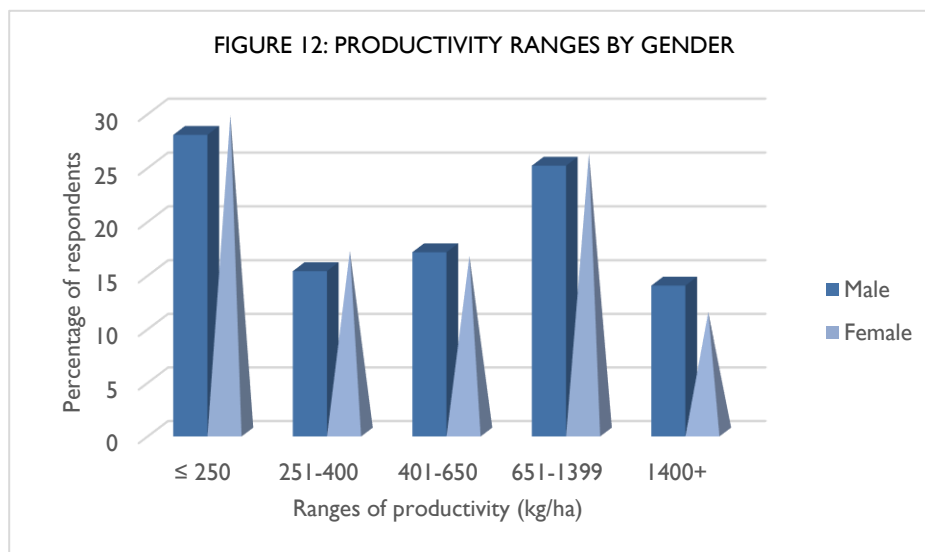
VARIETY	NUMBER OF PLOTS							TOTAL	PERCENT. (%)
	1	2	3	4	5	6	7		
Amelonado	253	131	57	19	9	3	2	474	11.8
Amazon	731	493	246	110	40	12	1	1,633	40.8
Hybrid	438	352	302	77	28	4	1	1,202	30
Mixed	321	174	96	44	21	2	0	658	16.4
Don't know	18	12	5	0	0	0	0	35	0.9
<b>TOTAL</b>	<b>1,761</b>	<b>1,162</b>	<b>706</b>	<b>250</b>	<b>98</b>	<b>21</b>	<b>4</b>	<b>4,002</b>	<b>100</b>

Source: Survey data, 2016



## 2.7 PRODUCTIVITY (KILOGRAMS PER HECTARE)

The Source Book for Sustainable Cocoa Production (Opoku et al., 2010) indicated that the average yield of cocoa farmers operating under low technology level is 400 kg/ha while those operations under medium and high production levels were 650 kg/ha and 1400kg/ha respectively.



The gendered productivity shown (Figure 12) also seem to show that there is not much difference between male and female productivity. Women were found in all of the different productivity ranges. Thus, it could be deduced that female farmers produce similar quantities per hectare as men and that given the opportunity, they could also be encouraged to produce more.

There is a significant ( $P < 0.001$ ) relationship between land tenure arrangement and cocoa productivity (kg/ha). Per Table 9b, while *abunu* had the least yield of 214 kg/ha (SE = 12.2), *abusa* out-yielded *abunu* by 157.5 kg/ha (SE = 19.8) and the owner operator also out-yielded *abunu* by 139.3 kg/ha (SE = 14.3). Respondents who had full control over land had 327.3 kg/ha (SE = 8.0); while respondents with partial control had reduced productivity by 93.7 kg/ha (SE=16.1). Further analyses may however be needed to relate these productivity patterns to the specific ages of the cocoa farms.

**TABLE 9A: ESTIMATED YIELD BY TENURE ARRANGEMENT**

ARRANGEMENT	YIELD ESTIMATE	STANDARD ERROR
Abunu (intercept)	214.9	12.2
Abusa	157.5	19.8
Owner	139	14.3

ANOVA: F value = 53.12, P value <0.001

**TABLE 9B: ESTIMATED YIELD BY RIGHTS TO LAND**

ARRANGEMENT	YIELD ESTIMATE	STANDARD ERROR
Full rights (intercept)	327.3	8.0
Partial rights	-93.7	16.1

ANOVA: F value = 33.8, P value <0.001

The relationship between gender and productivity was not significant (see Table 9d). While females had a productivity estimate of 334 kg/ha, males exceeded that by 26.3 kg/ha.

**TABLE 9C: ESTIMATED YIELD BASED ON GENDER**

GENDER	YIELD ESTIMATE	STANDARD ERROR
Female (intercept)	334	18.7
Male	26.3	20.6

ANOVA: F value = 2.35, P value = 0.125

### 3. FARM INVESTMENT AND DOCUMENTATION

It is interesting to note that for all the farm inputs in the survey questionnaire, the farm owner makes major decisions in respect of its purchase and the sharecropper has little decision making power (Table 10). This may be because most of the farms were being maintained under owner- operator system where the owner takes care of his/her farms. In cases where the farm owner's child is taking care of the cocoa farm, he/she also takes part in the decision whether to purchase the input.

**TABLE 10: WHO MAKES FARM-LEVEL DECISIONS**

DECISION	OWNER	SHARECROPPER	BOTH OWNER SHARECROPPER	OWNER'S CHILD
CSSVD control	74.3	20.3	5	0.5
Cutlasses	66.3	30.6	2.8	0.4
Cutting down old or diseased cocoa trees	74.1	20.4	5.1	0.4
Drying mats	68.5	27.6	3.6	0.4
Fertilizer	72.5	21.1	5.9	0.5
Fungicides	72.6	21.3	5.7	0.4
Heavy equipment	72.4	22.9	4.2	0.5
Herbicides	67.2	27.3	5.1	0.5
Insecticides	72.8	21.1	5.7	0.4
Replanting	71.2	23.5	4.8	0.4
Other rehabilitation activities	72.1	22.1	5.6	0.4

Source: Survey data, 2016

### 3.1 COST OF FARM MAINTENANCE

There is a significant ( $P=0.025$ ) relationship between land tenure arrangement and total cost (GHC) in managing a hectare of cocoa farm. Per Table 11, *abunu* had the least cost of 610.7 (SE = 33.7) with *abusa* outspending *abunu* by 27.1 (SE = 57.0) and the owner operator also outspending *abunu* by 99.0 (SE = 38.9). While the difference between expenditures made on *abunu* and *abusa* farms was not significant, it was for the owner. This is an indication that owner farm managers are more inclined to invest in the farms compared to the other farm management arrangements. Unfortunately, this higher investment is not commensurate with returns in yield as indicated in Table 9b.

**TABLE 11: TOTAL COST (GHC) OF FARM MAINTENANCE PER HECTARE UNDER DIFFERENT TENURE ARRANGEMENTS**

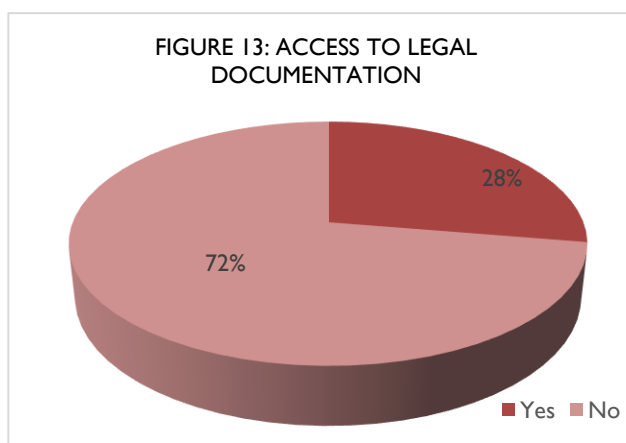
ARRANGEMENT	COST ESTIMATE	STANDARD ERROR
Abunu (intercept)	610.7	33.7
Abusa	27.1	57
Owner	99	38.9

ANOVA: F value = 2.71, P value <0.025

### 3.2 LEGAL DOCUMENTATION OF LAND RIGHTS

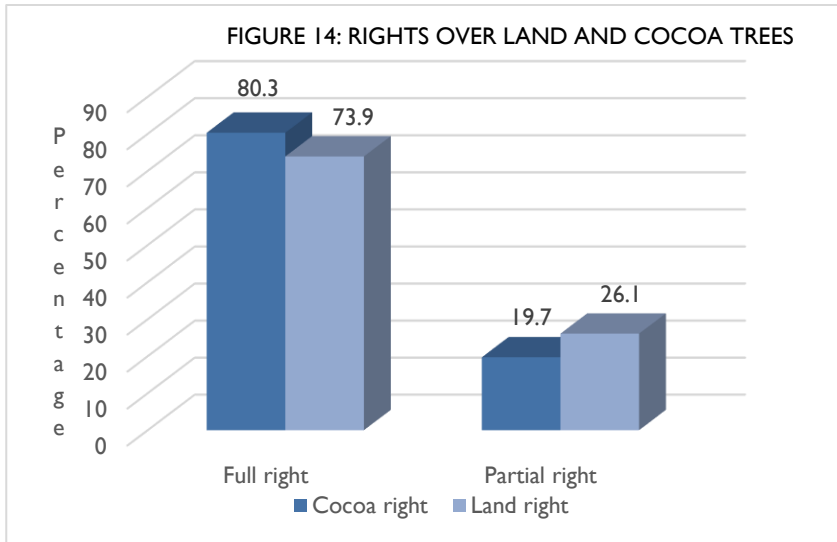
Most respondents in this study did not have any legal documentation of the cocoa plots that they owned or the rights they had on the plots that they worked. Having legal land documents could be helpful for both owners and sharecroppers even as collateral for farm credit. Although most farmers appreciate this, they have not taken steps to do so.

**FIGURE 13: ACCESS TO LEGAL DOCUMENTATION**



### 3.3 DECISION RIGHTS OVER COCOA TREES AND LAND

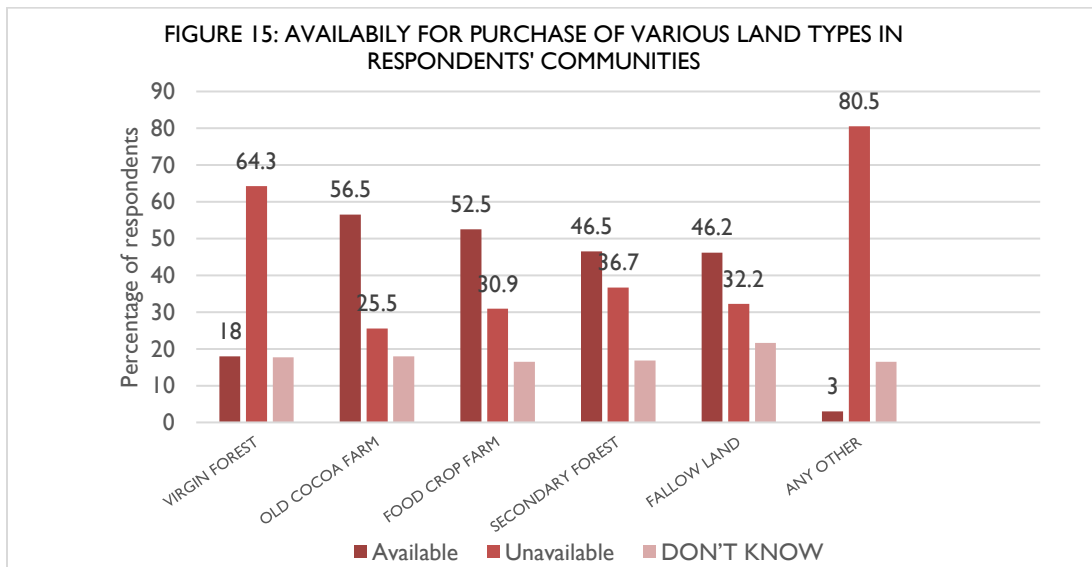
In trying to investigate respondents' level of control over cocoa trees and land, two different questions were posed. The first question was 'Is your right to use and make decisions over the cocoa trees, or over the land, as the case may be (1) full right to control over the cocoa trees, both use and make decisions or (2) Partial right-i.e. only use, but, not full control over the cocoa trees?'. Results showed that the majority (80.3% and 73.9% respectively) had full right over the cocoa trees as well as over the land (Figure 14).



Indeed, the results showed a significant relationship ( $P < 0.001$ ,  $X^2 = 1,294.5$ ) between land tenure status and security or control over land. While the owner was associated with full control, *abunu* and *abusa* sharecroppers were more associated with partial control over land.

### 3.4 AVAILABILITY OF LAND

While some respondents did not know whether any type of lands were available in their communities, those who did demonstrated awareness of the availability of all land types. However, it is indicative that virgin forests are mostly unavailable as indicated by 64.3% of the respondents. Some lands were also left fallow as indicated by 46.2% of the respondents (Figure 15).



Respondents were asked to give an estimation of the price per acre of the various types of lands available for farming in the communities. The results have been converted to price per hectare here for consistency. The results indicated a wide variation in the prices quoted by the respondents indicating that respondents were not very aware of how much land was sold in their communities. This may be because the sale of land or farms was private, and thus, the public may not have knowledge of it. However, the median amounts quoted showed that the perceived price per hectare of old cocoa farm was 9,880 GHC while that of virgin forest was 7,410 GHC. Even swampy areas were perceived to cost about 6,175 GHC per hectare (Table 12).

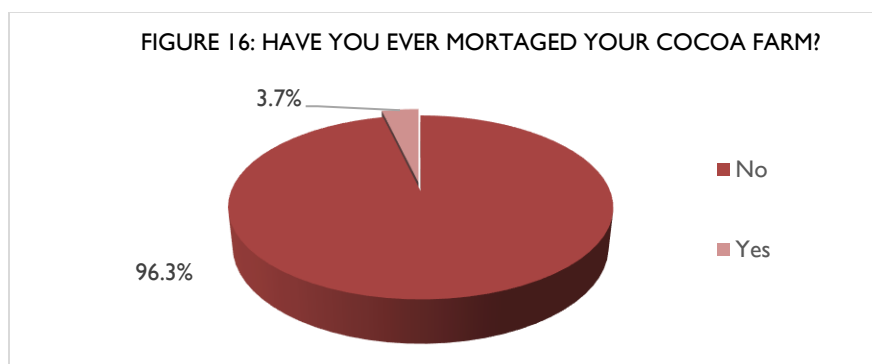
**TABLE 12: PERCEIVED PRICE OF ONE HECTARE OF VARIOUS LAND TYPES**

LAND TYPE	NUMBER OF RESPONDENTS	MEDIAN PRICE (GHC)	AVERAGE PRICE (GHC)
Virgin forest	264	7,410	9,288.9
Secondary forest	470	6,175	8,192
Old cocoa farm	531	9,880	12,038
Fallow land	431	6,175	7,785.4
Food crop land	444	6,051.5	7,694.3
Oil palm farm, swamp	10	6,175	807.7

Source: Survey data, 2016

### 3.5 FARM MORTGAGING

A few respondents (less than 4%) had ever mortgaged their cocoa plots (Figure 16). Those that had did for a minimum of two and a maximum of 12 years. Table 13 describes the ranges of years within which cocoa plots were mortgaged or pledged for money by respondents. The reasons for mortgaging cocoa plots were mostly genuine pressing social or economic need such as health and/or children's educational needs (Table 14). This shows that at some point in time, some vulnerable cocoa farmers need financial assistance to meet pressing family needs and may sell or pledge their cocoa plots for a quick influx of cash to meet those needs.



**TABLE 13: NUMBER OF YEARS THAT RESPONDENTS MORTGAGED THEIR FARMS**

RANGE (YEARS)	FREQUENCY	PERCENTAGE (%)
1-3	17	27.4
4-6	35	56.4
7-9	5	8.1
10+	5	8.1
<b>Total</b>	<b>62</b>	<b>100</b>

Source: Survey data, 2016

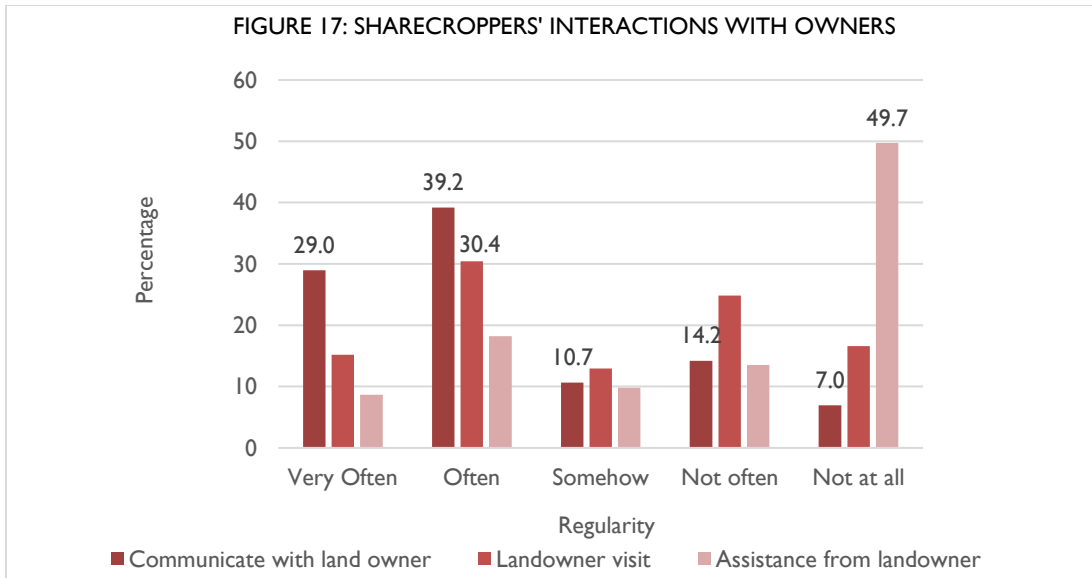
**TABLE 14: REASONS FOR MORTGAGING COCOA FARMS**

REASON	FREQUENCY	PERCENTAGE (%)
Children's School Fees	15	24.2
Medical Bills	15	24.2
Funeral	9	14.5
Loan Repayment	8	12.9
Family Expenses	7	11.3
Travel	4	6.5
Accommodation Expenses	2	3.2
Family Dispute Settlement	2	3.2
<b>Total</b>	<b>62</b>	<b>100</b>

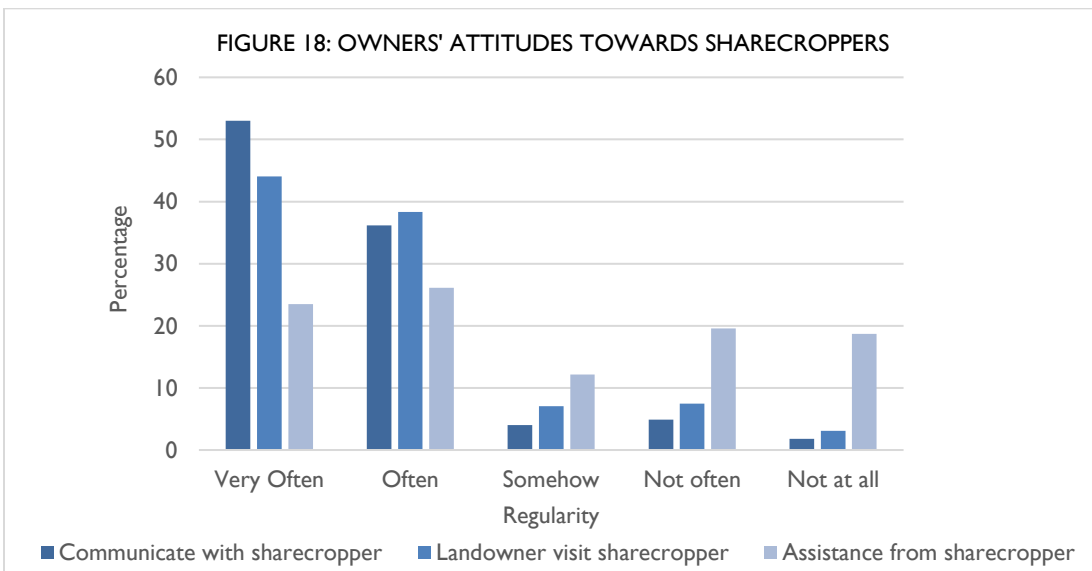
Source: Survey data, 2016

#### 4. OWNER—SHARECROPPER RELATIONS

Sharecroppers were asked to measure on a scale of one (not at all) to five (very often) how often they communicated with their land owners, how often their land owners visited them or how often their land owners were requested of assistance. Results showed that most sharecroppers do not get assistance from their owners as expected and that, only a quarter of them get visited 'often' by their owners (Figure 17).

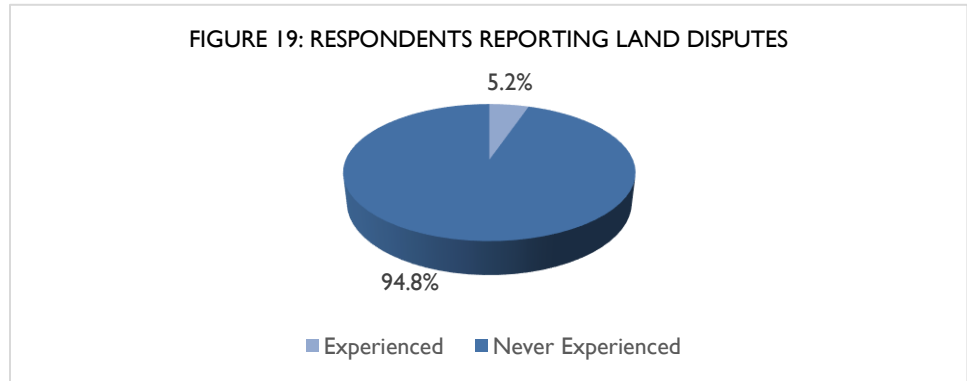


Results of perception of farm owners, however, indicated that they communicated very/often with their sharecroppers, they visited and even gave them assistance (Figure 18) contrary to what the sharecroppers perceived. Perhaps the sharecroppers expect more interaction with their farm/land owners which is a relational issue to be discussed among them for motivation and mutual benefit.

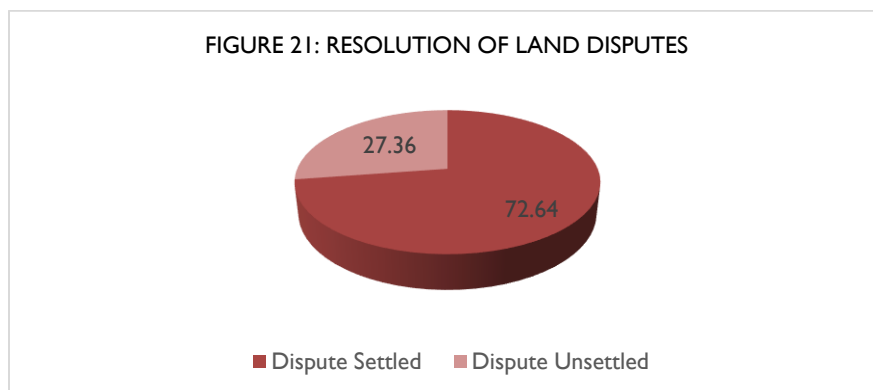
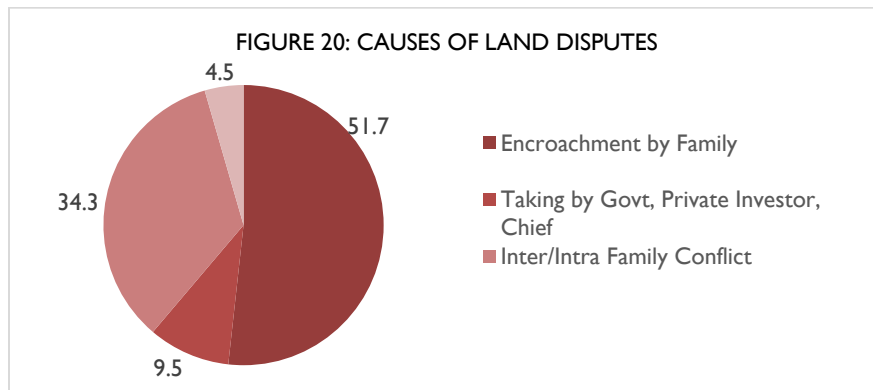


## 5. LAND DISPUTES

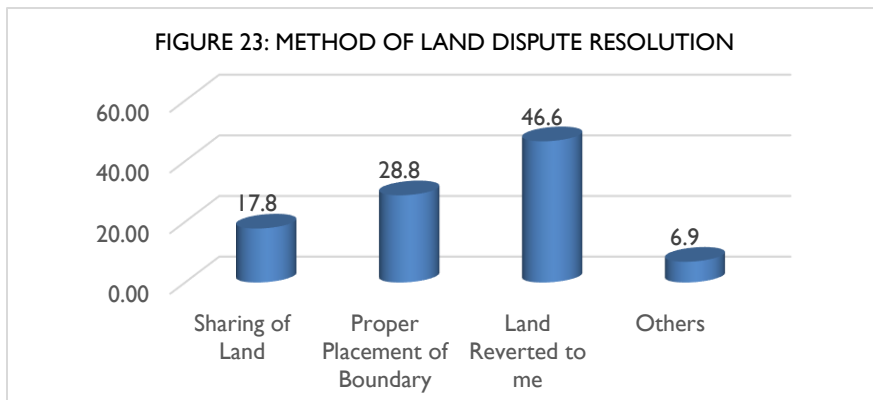
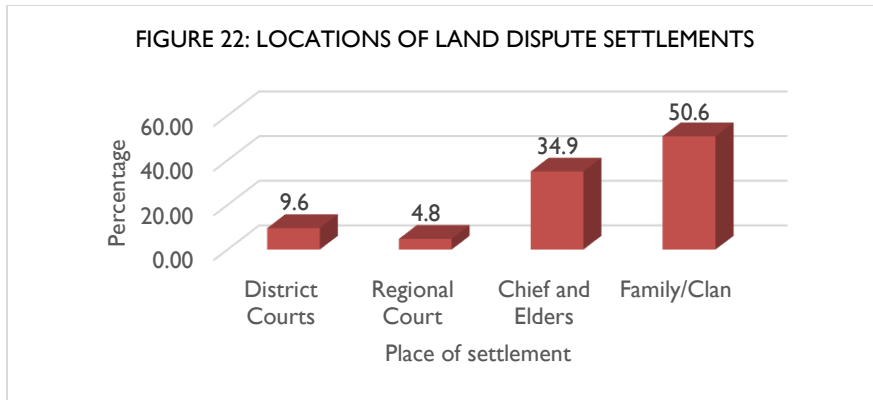
Only a few respondents (5.2%) had ever experienced any land disputes; the majority (about 95%) indicated that they had not yet experienced any disputes on their lands or in respect of their cocoa farms (Figure 19).



For those who had experienced disputes, the causes ranged from encroachment by family members, to other inter and intra family conflicts. Less than 5% were disputes between land owners and sharecroppers (Figure 20). Fortunately, about 73% indicated that the disputes were settled (Figure 21) and usually by the family/clan, chief and elders or at the district courts (Figure 22). In most cases, land reverted to the victims, which gave them satisfaction of settlement or that the boundaries were properly demarcated (Figure 23) to avoid further disputes.

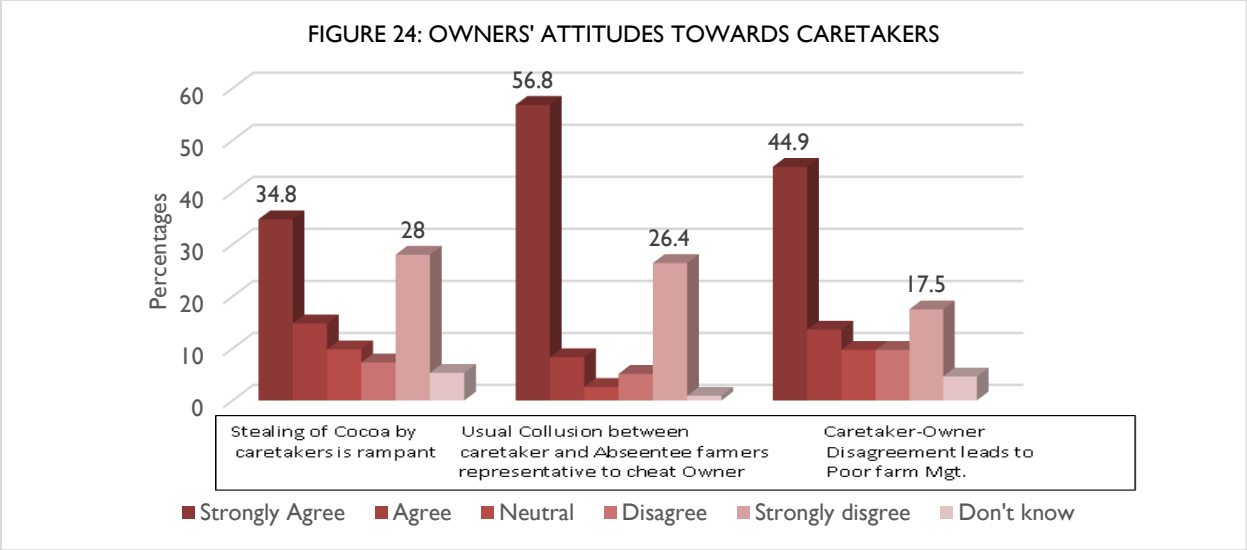




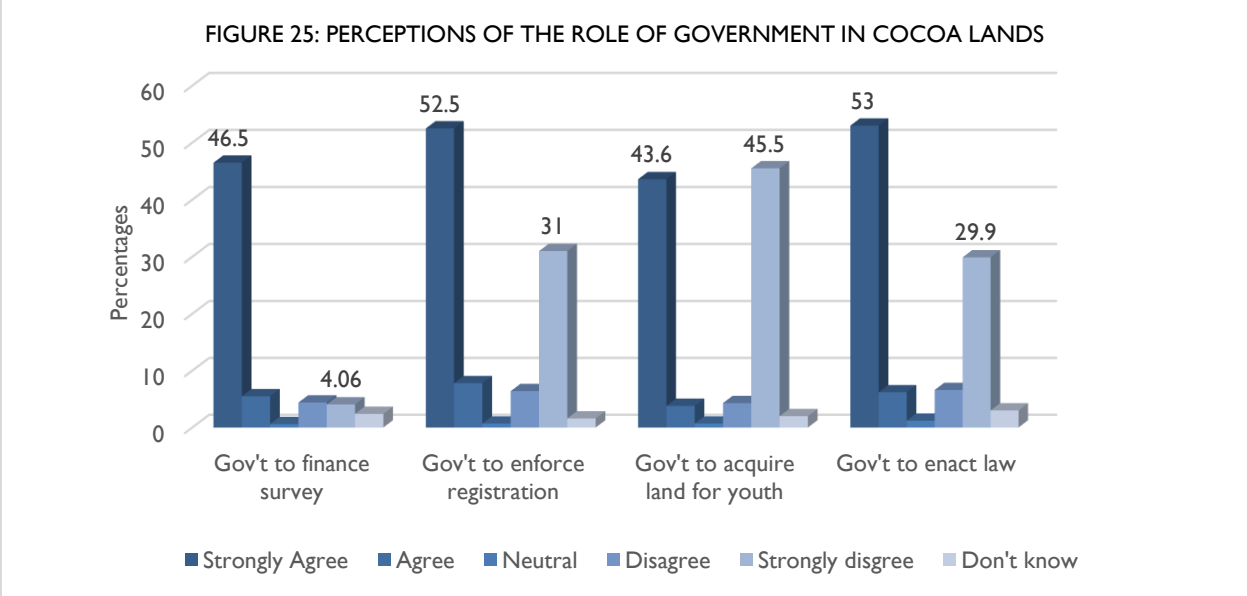


## 6. ATTITUDES TOWARDS LAND TENURE ISSUES

Respondents were asked to further give their impressions on some attitude and relationship questions between farm owners and sharecroppers. Firstly, farm owners had strong impressions that stealing of cocoa by caretakers was rampant and that caretakers sometimes conspired with representatives sent by the farm owners to cheat them (owners). They further believed that disagreement between them (owners) and caretakers usually leads to antipathy and subsequently, poor farm maintenance on the part of the caretakers (Figure 24). Most respondents strongly agree that government should play major role in surveying, registration, enacting laws guiding land administration as well as giving land to youth for cocoa farms (Figure 25).



Nonetheless, there is an equally significant number of respondents that strongly disagree that the government should secure land for the youth to plant cocoa or to play an active role in land registration or even finance land surveys for farmers.



In terms of involvement of chiefs in land registration and disputes, around 40% or more of respondents strongly believe that chiefs should be involved in the settling of land disputes as well as in the registration of lands, while close to 30% also strongly disagree (Figure 26).

FIGURE 26: PERCEPTIONS OF THE ROLE OF CHIEFS IN COCOA LANDS

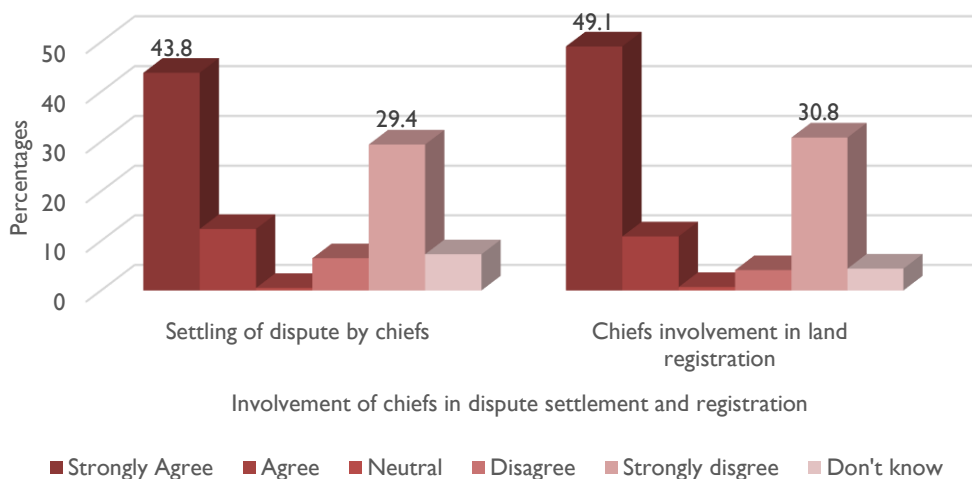
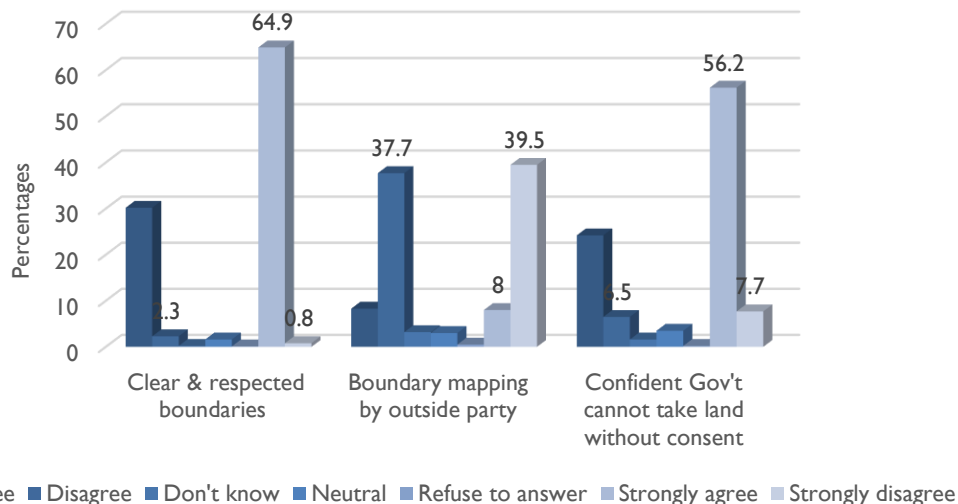
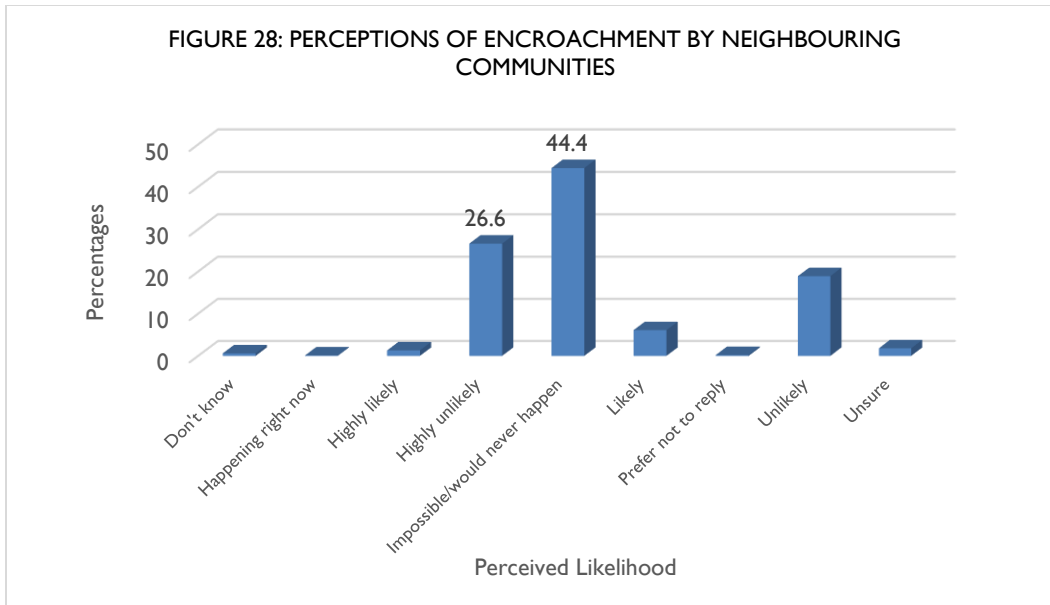


FIGURE 27: PERCEPTIONS OF LAND SECURITY

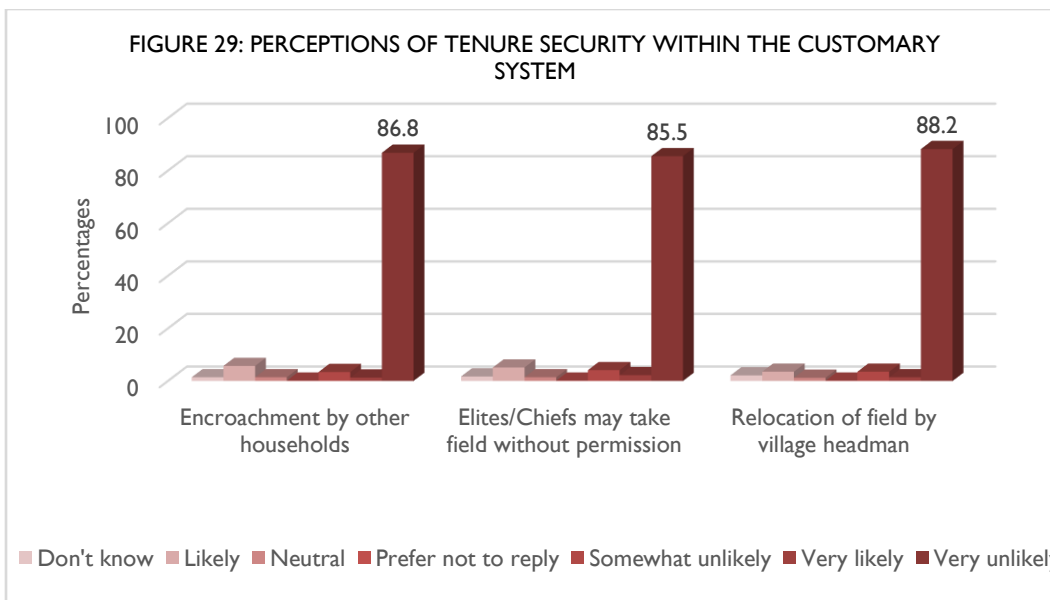


Further, the results showed that the majority strongly agree (64.9%) that the farms they are cultivating have clear boundaries within the village; only a few disagree to that fact. About 40% strongly disagree or simply disagree (37.7%) that their farms are mapped by outside party. Also, over 56% are confident (strongly agree) that neither the government nor any investor can take their farm lands without negotiating fair compensation (Figure 27).

Over 70% of respondents believe that in the next three years, it is highly unlikely or impossible that people from neighboring villages will encroach or cross over to use any of the fields that they own (Figure 28).



Furthermore, over 85% share the opinion that in the next one to three years, it is very unlikely that there could be any encroachment, taken over or relocation of any part of their farm lands by other household members, elites or chiefs or even by any person from any other village (Figure 29).



## 7. CHALLENGES IN MANAGING COCOA FARMS

On the Survey, respondents were asked to identify the major challenges they face in managing their cocoa plots. They could provide multiple unranked answers. Responses fall under three broad categories, namely: those associated with land tenure, those related to cocoa production/ productivity and others that were specified by respondents. In sum, challenges associated with land/farm related issues constituted about 5% of total multiple response given by farmers. Challenges related to cocoa production/productivity were the most pronounced, constituting over 62% of the total responses. Of

those, most were economic issues, while farm level/technical issues made up smaller number of responses.

## 7.1 LAND TENURE CHALLENGES

The three most important challenges related to cocoa farm/land tenure were Lack of/ delay of legal documents on tenurial arrangement (32.1%), disputes between land/farm owners and sharecroppers (21.2%) and High cost of land levy by landowners (19.9) (Table 15a).

**TABLE 15A: FARM-LEVEL CHALLENGES ASSOCIATED WITH LAND TENURE**

CHALLENGE	FREQUENCY	PERCENTAGE (%)
Lack of or delay in receiving legal documentation	50	32.1
Disputes between landowners and sharecroppers	33	21.2
Burdensome land levies by landowners	31	19.9
Encroachment by family members/neighbors	11	7.1
High cost of maintenance by sharecroppers/caretakers	9	5.8
Cheating by owners or sharecroppers	7	4.5
Unfavorable tenure conditions for sharecroppers	6	3.8
Breach of tenure arrangement	5	3.2
High cost of tenure documents	2	1.3
Lack of witnesses to land rights	1	0.6
Negative third party report to owner regarding sharecropper	1	0.6
<b>Total Responses</b>	<b>156</b>	<b>100</b>

Source: Survey data, 2016

## 7.2 PRODUCTIVITY CHALLENGES

Challenges in respect of the above related mainly with high cost of inputs including insecticides, fungicides and even labor to maintain the cocoa farms plots (Table 15b).

**TABLE 15B: FARM-LEVEL CHALLENGES RELATED TO COCOA PRODUCTION**

CHALLENGE	FREQUENCY	PERCENTAGE (%)
Input-related (high cost, inadequate supply, irregular supply)	1,162	56.3
Environmental (pests/diseases, soil, aged trees, climate)	725	35.2
Labor-related (high cost, poor work ethic)	147	7.1
Other (stealing of beans, small-scale mining, low cocoa prices)	28	1.4
<b>Total Responses</b>	<b>2,074</b>	<b>100</b>

Source: Survey data, 2016

## 7.3 OTHER CHALLENGES

Apart from those discussed above, the main socioeconomic challenge facing the respondents was financial difficulties as indicated by over 85% of the respondents (Table 15c), which was also the underlying challenge on accessing adequate and timely inputs and especially, labor for farm maintenance.

**TABLE 15C: OTHER SOCIOECONOMIC CHALLENGES FACED BY RESPONDENTS**

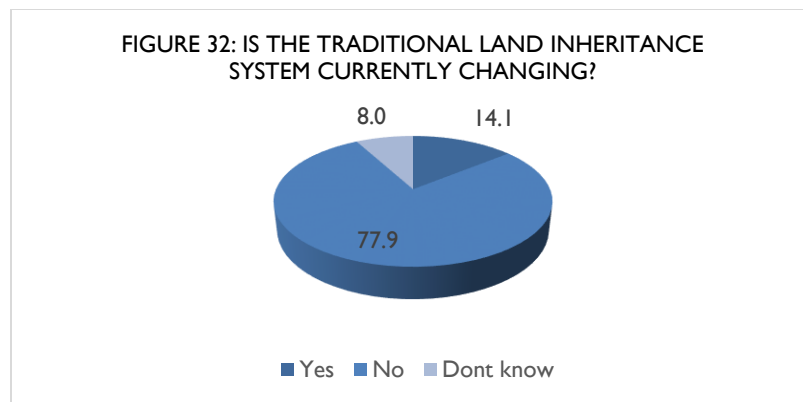
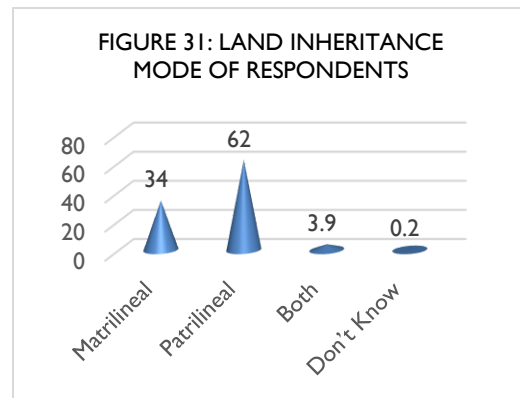
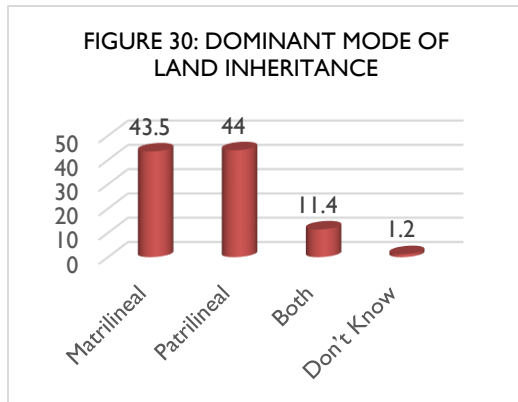
CHALLENGE	FREQUENCY	PERCENTAGE (%)
Financial problems	935	85.2
Health and old age	83	7.5
Lack of amenities (water and poor roads)	60	5.4
Lack of government support (insurance, pensions, scholarships for selves or children)	18	1.7
Flooding	2	0.2
<b>Total responses</b>	<b>1,098</b>	<b>100</b>

Source: Survey data, 2016

## 8. SOCIOCULTURAL INFLUENCES ON COCOA FARMING

### 8.1 DOMINANT LAND INHERITANCE SYSTEMS IN RESPONDENT COMMUNITIES

Figures 30 show that both matrilineal and patrilineal inheritance systems are still recognized modes of the land inheritance in the communities. However, 62% of the respondents practiced the patrilineal (Figure 31). Of course, some 14.1% recognized changes in the traditional land inheritance system (Figure 32). Their reasons were mainly due to Intestate Succession Law (PNDC Law 111, 1985) as reiterated by 62.5% of the respondents who have seen changes (Table 15). This law makes significant proportion of a person's property to his nuclear family members especially wife/wives and children in the event where there is no formal 'will'.



**TABLE 16: PERCEPTIONS OF CHANGES TO THE TRADITIONAL LAND INHERITANCE SYSTEM AND THEIR CAUSES**

TYPE	DETAIL	NUMBER OF FARMERS	PERCENTAGE (%)
Perceived Changes	Gradual change from matrilineal to patrilineal land inheritance system	4	1.6
	Gradual change from patrilineal to matrilineal land inheritance system	2	0.8
	Both systems are now practiced	2	0.8
Perceived Causes	Intestate succession law	155	62.5
	Parents preference for children to inherit their property	70	28.2
	Sharing is sometimes unfair under the matrilineal system	6	2.4
	Education has enlightened parents on property sharing	5	2
	Nieces and nephews can only inherit family land	2	0.8
	Children prevent nieces/nephews from inheriting property	2	0.8
<b>Total</b>		<b>248</b>	<b>100</b>

Source: Survey data, 2016

Sometimes, certain conditions such as poor health, aging, absenteeism, multiple farm holdings or engagement in other economic activities (probably as a main occupation) are the main reasons why farmers may decide to give their farms to caretakers to manage (Table 17a & b).

**TABLE 17A: CAUSES CONTRIBUTING TO THE USE OF CARETAKERS AMONG RESPONDENTS**

CAUSES	NUMBER OF FARMERS	PERCENTAGE (%)
Age of owner	1,273	28
Health of owner	1,173	26
Absenteeism	897	20
Owner lacks funds	514	12
Owner has multiple farm holdings	513	11
Unwillingness of children of owner to farm	134	3
<b>Total responses</b>	<b>4,504</b>	<b>100</b>

Source: Survey data, 2016



**TABLE 17B: CAUSES CONTRIBUTING TO THE RESPONDENTS' CESSATION OF COCOA FARMING**

CAUSES	NUMBER OF FARMERS	PERCENTAGE (%)
Engagement in other economic activity	34	51.5
Gender issue (unspecified)	8	12.1
Lack of knowledge on cocoa farming	6	9.1
Death of owner	4	6.1
Large farm size	4	6.1
Loss of interest in cocoa farming	3	4.5
Tedious nature of cocoa farming	3	4.5
Laziness	2	3
Distance to farm	1	1.5
Land disputes	1	1.5
<b>Total responses</b>	<b>66</b>	<b>100</b>

Source: Survey data, 2016

At times, it is important to leave farm lands cultivated for a long period to lie fallow to regain soil fertility. However, the results showed that some respondents (17.1%) may never leave their farm lands to lie fallow or are unable to say for how long they could do so (4.5%). The majority (62.8%) responded that they could leave their farm lands fallow for up to 10 years (Table 18).

**TABLE 18: DURATION OF TIME THAT RESPONDENTS FELT THEY COULD LEAVE THEIR COCOA PLOTS FALLOW**

RANGE (YEARS)	NUMBER OF FARMERS	PERCENTAGE (%)
Never	302	17.1
Up to 10 years	1,106	62.8
11-30	53	3
31-60	9	0.5
61-90+	17	1
Forever	195	11.1
Don't know	79	4.5
<b>Total responses</b>	<b>1,761</b>	<b>100</b>

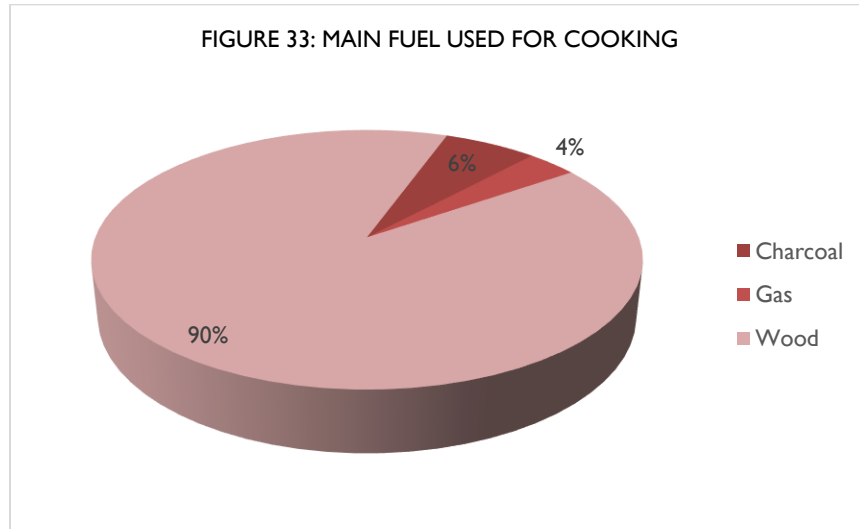
Source: Survey data, 2016

## 9. HOUSEHOLD STANDARDS OF LIVING

The Survey measured several indirect indicators of household standards of living, including source of fuel, construction materials used in main exterior walls of residences, and the types of household durables owned by the respondents.

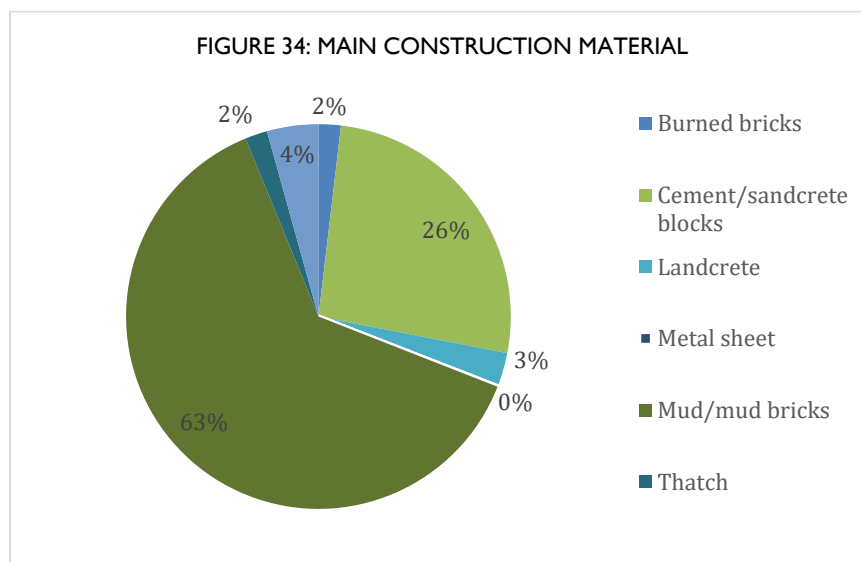
### 9.1 SOURCES OF COOKING FUEL FOR HOUSEHOLDS

Over 90% of respondents were using wood for their main household fuel; only 3.5% were using gas as source of cooking fuel (Figure 33).



### 9.2 CONSTRUCTION MATERIALS USED ON MAIN EXTERIOR WALLS OF RESPONDENTS' RESIDENCES

Only 26.2% had used cement/sandcrete blocks for the construction of their exterior walls of their buildings, the majority (62.9%) had used mud bricks (Figure 34).



### 9.3 HOUSEHOLD DURABLES OWNED

On the assessment of ten household durables/basic needs, over 80% had mobile phones and radio sets. Over 56% had television sets; about 9% and 28.2% had personal computers and satellite dish televisions, respectively (Table 18). This compares well with other studies conducted by Asamoah, et al (CRIG Annual Report 2014/15).

**TABLE 19: OWNERSHIP OF VARIOUS HOUSEHOLD DURABLES (1,761 RESPONDENTS)**

DURABLE	OWNS		DOESN'T OWN	
	FREQUENCY	PERCENT. (%)	FREQUENCY	PERCENT. (%)
Mobile phone	1,529	86.8	232	13.2
Radio	1,455	82.6	306	17.4
Television	994	54.4	767	43.6
Bicycle	517	29.4	1,244	70.6
Satellite dish/ multiple televisions	497	28.2	1,264	71.8
Motorcycle	261	14.8	1,500	85.2
Personal computer	149	8.5	1,611	91.5
Truck/commercial vehicle	76	4.3	1,685	95.7
Saloon car	55	3.1	1,706	96.9
Cart/motor tricycle	31	1.8	1,730	98.2

Source: Survey data, 2016

## KEY FINDINGS AND CONCLUSIONS

- A total of 3,900 farms and 1,761 farmers were surveyed. About half of the farmers (48.2%) are middle aged (41-60 years), while 31.4% are considered youth (18-40 years). 74.8% are male, while 25.2% are female. 60% are native to the community they grow cocoa in, while 40% are migrants mostly from other parts of Ghana. In terms of education, 22.5% are illiterate, while 69.5% have had only a basic education. 77% of the respondents are married. 86% are heads of household (73.1% male, 26.9% female). About half of the farmers (50.4%) received 70-100% of their income from cocoa.
- Nearly two-thirds (64%) of respondents manage only one (33%) or two (31%) plots. The 3,900 plots surveyed fall under the following tenure arrangements:
  - Owned: 62.7%
  - Abunu: 22.7%
  - Abusa: 14.5%
  - Renting: 0.1%
- The main modes of farm acquisition were patrilineal or matrilineal inheritance systems (22.6%), *abunu* sharecropping (25.1%), gifts from close relatives (22.6%), and family land (10.9%). Irrespective of the recognition of matrilineal and patrilineal systems of inheritance that are still dominant in the survey area, the Intestate Succession Law (PNDC Law 111 of 1985) is perceived by respondents as increasing equitable land inheritance among nuclear family members.
- Most respondents were cocoa farm owners maintaining the plots themselves, probably due to the majority being in the productive age group cohort.
- Productivity among those surveyed was generally low, especially, among most small-scale producers.
- The Survey reported the follow productivity levels per tenure type:
  - Abusa: 371.5 kg/ha
  - Owner-operator: 353.3 kg/ha
  - Abunu: 214 kg/ha

Full Rights over land significantly affected productivity; while respondents with full rights had 327.3kg/ha, those with partial rights had on average reduced productivity by 93.7 kg/ha.

- There is some level of communication, interaction and assistance between farm owners and sharecroppers, but sharecroppers seem to expect more from their land/farm owners. Owners perceive their oversight and visits to farms as being satisfactory.
- Overall, the survey's results appear to show that land tenure is not perceived as a major issue facing cocoa farmers in Ghana. This indicates that Ghanaian cocoa farmers feel their land rights are secure

under the customary system. For example, respondents listed key cocoa growing challenges as follows:

- Productivity challenges: 62%
  - Farm level technical issues (diseases, soil fertility, etc.): 33%
  - Land tenure: 5%
- Respondents listed the following reasons why they would be unable to continue to grow cocoa:
    - Engagement in other activity: 51.5%
    - Gender issues (unspecified): 12.1%
    - Land disputes: 1.5%
  - Majority of respondents seem to have security and confidence that their cocoa land will not be taken over or encroached upon by anyone even though the majority do not have legal documents.
  - Sixty-five percent of farmers strongly agree that their farms have clear and respected boundaries while only 2.3% disagree. 56.2% of respondents are strongly confident that the government cannot take their land without consent, while only 6.5% disagree.
  - Seventy-one percent of respondents believe that encroachment from another community is either impossible (44.4%) or highly unlikely (26.6%) in the next three years. 86.8% of respondents feel that encroachment from other households within their community is highly unlikely in the next three years.
  - 85.5% feel that it is highly unlikely that a chief would take their land without permission in the next three years. 88.2% believe that it is highly unlikely that a family head will relocate their land in the next three years.
  - Almost 95% of respondents reported never experiencing a land dispute. Of the 5.2% that had experienced a dispute, the following causes were reported most frequently:
    - Family encroachment: 51.7%
    - Inter/intra family conflict: 34.3%
    - Encroachment by government, private investor or chief: 9.5%
  - About 73% of those who had reported experiencing land disputes had those disputes resolved by:
    - Family/clan: 50.6%
    - Chief/elders: 34.9%
    - District courts: 9.6%
    - Regional courts: 4.8%
  - The results of those settlements were as follows:

- Land reverted to complainant: 46.6%
  - Proper placement of boundary: 28.8%
  - Sharing of land: 17.8%
  - Other (unclear from Survey): 6.9%
- Key land tenure challenges reported by respondents are:
    - Lack of legal documentation: 32.1%
    - Disputes between landowners and sharecroppers: 21.1%
    - High cost of land levies by landowners: 19.9%
    - Encroachment by family/neighbors: 7.1%
    - High cost of maintenance by sharecroppers/caretakers: 5.8%
    - Cheating by owners or sharecroppers: 4.5%
    - Unfavorable tenure conditions for sharecroppers: 3.8%
    - Breach of tenure arrangements: 3.2%
    - High cost of land tenure documents, problems of witnesses, and negative reports by a third party to owner were all reported by a small percentage of respondents.
  - Seventy-two percent of respondents did not hold legal documentation of their land rights, while 28% did. The Survey did not disaggregate by tenure type.
  - About 74% of farmers reported being able to leave their land fallow for up to ten years (62.8%) or even forever (11.1%). However, 17.1% of respondents reported never being able to let their land lie fallow, a possible indication of land insecurity issues.
  - Survey respondents were divided on the government's role in land rights issues:
    - 53% strongly agree the government should enact land laws, while 29% strongly disagree
    - 52.5% strongly agree the government should enforce registration, while 31% strongly disagree
    - 46.5% strongly agree that the government should finance land rights surveys, while 4.1% strongly disagree
    - 43.6% strongly agree that the government should acquire land for youth, while 45.5% strongly disagree
  - Survey respondents were also divided on the involvement of chiefs in land rights issues:
    - 43.8% strongly agree that chiefs should be involved in settling disputes, while 29.4% strongly disagree

- 49.1% strongly agree that chiefs should be involved in land registration, while 30.8% strongly disagree.
- The Survey also gathered data on the perceptions of cocoa farmers in Ghana on the availability and cost of various types of land:
  - While about half of respondents reported the availability of old cocoa farms, food crop farms, secondary forest and fallow land in their communities, only 18% reported the availability of virgin forest.
  - Of all the types of land available to farmers, old cocoa farms were perceived as the most expensive at an average price of 4,874 GHC per acre. Excluding oil palm/swamp land that few respondents reported price expectations for, the cheapest land was food crop land at an average of 3,115 GHC per acre.
- With respect to tree tenure, the survey did ask all respondent whether they had control over the trees on their farms and 80.3% reported full control of trees while 19.7% reported partial control of trees.
- Most farmers have the basic information and communication technological gadgets (namely radio, mobile cell phones a, television sets) that can help them assess or be reached with current affairs and information.
- The main challenges facing respondents were financial difficulties, input related: including high cost of labor, high cost of chemicals, non-availability of approved chemicals and inadequate or untimely supply from government (i.e. the government policy of free supply of inputs to cocoa farmers in Ghana).
- The main reasons for farmers leaving their farms to caretakers were ageing, ill-health, absenteeism and engagement in other economic activities.

## CONCLUSIONS

This study set out to establish the impact of land tenure on cocoa production in Ghana. Aspects of land tenure that can potentially affect cocoa production include the availability of land for possible extension or new planting, the mode of acquisition of land, the existence and structures for resolution of land disputes, and the level of control that is given to sharecroppers.

The study has established that there exists a relationship between land tenure arrangement and productivity. Farm owners, of course, take investment decisions by themselves but in terms of sharecropping, the decision makers are not the owners. *Abunu* farms appeared less productive compared to *abusa* or owner-operated farms. It may be likely that the age of the farms matter here as *abunu* farms are always shared prior to the peak of production and so *abunu* farmers who have graduated into the owner category are more likely to have higher productivity due the relative age of their farms as compared to *abusa*.

The study further showed that on rare occasions do farmers have disputes over their cocoa farms. The traditional structures available which involve verbal agreements in the presence of witnesses and on

trust are well equipped in dealing with problems on tenorial disputes that farmers may face. Despite this finding, there remains an urgent need to establish viable and cost-effective mechanisms for legal documentation of farm ownership and tenancy. The benefits of legal documentation to farmers are substantial as it will enhance their security and usage as collaterals for bank loans.

*Abunu* sharecropping was found to be a major mode of land acquisition by respondents, followed by gift and inheritance. The main condition associated with the *abunu* arrangement that farmers found uncomfortable was the farm owners' liberty to take back land in cases of land being cleared of cocoa trees due to factors such as fire, disease control and rehabilitation. This condition is a disincentive to rehabilitation or re-cultivation, a necessary factor towards higher production. Males were more associated with *abunu* sharecropping as a means of land acquisition, while females were more associated with owner and *abusa* sharecropping. These gender disparities will require further analysis to adequately understand the underlying causes.

It must be noted that even though responses appeared to indicate that farm lands for sale may be available, less than one-tenth of the farmers acquired their lands through direct purchase, lease or mortgage. The price of a hectare may still be prohibitive, restricting the easy access to land for potential farmers, especially the youth. This has implications for cocoa expansion, rehabilitation and production in Ghana.



## POLICY RECOMMENDATIONS

Based on the results and key findings of this study, the following recommendations are made for policy consideration:

- The government, through the Ghana Cocoa Board (COCOBOD) in conjunction with the CLSs and local NGOs such as COLANDEF, should undertake a nationwide sensitization/education on the need for farmers to seek to document their farm/lands and tenure arrangements to have security for themselves and especially, for posterity instead of being seemingly confident with the current status quo of no dispute and fear of insecurity. This effort could also encourage the joint registration of land between husbands and wives to ease inheritance upon the death of the landowner and in line with either the matrilineal or patrilineal precepts of the local clan and ethnic group.
- COCOBOD in collaboration with the Lands Commission design a simple, sustainable, and affordable land administration system for customary land registration which is legal under Ghanaian laws to provide land tenure security to cocoa farmers. This system should be linked to the Customary Land Secretariats (CLS) as established by the Land Commission under the Land Administration Projects (LAP I and LAP II). When such a system is established, COCOBOD through its Cocoa Health and Extension Division (CHED) can spearhead its implementation with support from the land agencies and other private sector operators with technologies in land survey and mapping.
- COCOBOD should provide financial resource to CHED which has been mandated to measure farms using GPS before supplying any agro-input to a farmer to go a step further provide farmers site plans of their farms after measurement. This will ensure farmers have a fair ideal of the size of the farms and help in their investment decisions such as application of agro-chemicals. Farmer could also be asked to pay appropriate costs for the development of the site plans and registration of the parcels with the CLSs after farms are duly measured and documented. It will be particularly important to ensure that any plot surveying is coupled with an effective and culturally appropriate method of ensuring that no boundary or other disputes related to the land exists within the community and/or the family. Additionally, this system should also seek to register with the new CLSs the status of land titling as well as registering any sharecropping arrangements since the security of any sharecroppers claim to use of land is ultimately tied to the underlying property owner's rights derived from ownership.
- Where possible and feasible, the introduction of structured lease agreements that spell out use rights and duration of the sharecropping agreement under both *abunu* and *abusa* arrangements could be promoted and registered with CLS while ownership was registered. This might also provide a predictable and transparent system for estimating tax and duty revenue by traditional authorities and the government tax authorities.
- COCOBOD in consultation with land tenure experts should consider innovative pilot schemes designed to test incentives and approaches that would help to reconcile long-term recapitalization of old and/or diseased cocoa farms with the realities of tree tenure laws in Ghana, particularly when *abunu* and *abusa* arrangements specify that land automatically reverts to owner upon the felling of trees. One approach might be to consider an arrangement with different levels of sharing of proceeds during the “renovation and rehabilitation phase” of a farm and a different level of proceed sharing across the productive life of the new farms. This effort could also begin to lay the basis for possible

loan collateral against which farmers could present their titles and deeds to receive much needed credit to purchase improved inputs and access other professional farm services such as spray service provision and pruning services, among others.

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