



Ghana's rural finance system and climate regime

An in-depth analysis

Prepared for the World Wildlife Fund

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Acronym List

ADB	Agricultural Development Bank
BoG	Bank of Ghana
CDM	Clean Development Mechanisms
CO ₂	Carbon Dioxide
COCOBOD	Ghana Cocoa Board
CREMAs	Community Resource Management Areas
CU	Credit Unions
CUA	Credit Union Associations
FC	Forestry Commission
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Program
FLEGT	Forest Law Governance and Trade
GHAMFIN	Ghana's Microfinance Network
GEF	Global Environmental Facility
GHG	Greenhouse Gases
GoG	Government of Government
HFZ	High Forest Zone
IPCC	Intergovernmental Panel in Climate Change
MoA	Ministry of Agriculture
MOFA	Ministry of Food and Agriculture
MLNR	Ministry of Land and Natural Resources
NCCC	National Climate Change Committee
NCRC	Nature Conservation Research Centre
NGO	Non-governmental Organizations
NREG	Natural Resource and Environmental Governance Program
NRSC	National REDD-plus Steering Committee
OASL	Office of Administration of Stool Lands
R-PP	Readiness Preparation Proposal
R-PIN	Readiness Preparation Idea Note
REDD	Reduce Emissions from Deforestation and Degradation
REDD-plus	REDD, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
RCB	Rural Community Bank
TFD	The Forest Dialogue
UNFCCC	United Nations Climate Change Conference
WWF	World Wildlife Fund

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Chapter 1: Introduction

Within the last few years, Ghana's government has realized the importance of abating the effects of climate change on its predominately agrarian economy. Their action includes going through the formal process of becoming *REDD-ready*. Although Ghana's pro-action toward climate change is commended, a main question arises: *Given the current institutional and financial structure, will REDD benefits actually reach those that are changing their practices to abate CO₂ emissions?* From this overarching question, this study is focused on understanding the rural financial structure in Ghana, and whether financial services are adequately reaching smallholder farmers. Then, we provide a greater understanding if REDD-plus and other carbon offset projects that could provide alternative funding to farmers in Ghana, in order to reduce deforestation while fighting poverty.

When uncovering the layers of Ghana's rural financial system, it was realized that there are a number of structural gaps in providing services to smallholder farmers; as well as questions of sustainability to rural community banks that provide financial services to these in rural areas. As for REDD-plus, the Ghanaian government is still designing how it will be implemented and who will be in charge of certain aspects of REDD-focused projects. However, given the current issues with banking services to farmers there are concerns of funding actually reaching those that have shifted their agricultural practices to be more sustainable (which may lead to a decrease in profits in the short and medium term). A further investigation, also found a possible pricing gap (dependent on the current price of carbon) between the potential funds for an average farmer to abate carbon emissions and the forgone profits to that farmer.

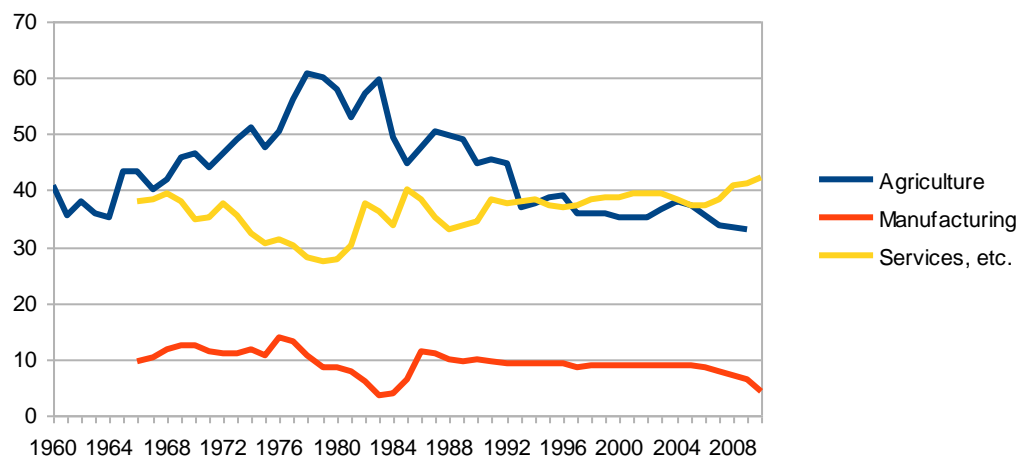
This study consists of four parts: 1) an assessment of Ghana's agricultural economy and of any fundamental gaps that may pose potential problems for carbon offset projects in the future; 2) an assessment of Ghana's rural financial system, and address whether banking services are adequately reaching smallholder farmers; 3) a brief overview of Ghana's climate change regime, and see if REDD-plus and other potential carbon markets could provide alternative sources of funding to smallholder farmers; 4) identify what needs to be done to "bridge the gaps" for rural finance and land tenure issues, and recommendations for the World Wildlife Fund.

Chapter 2: Ghana's Agricultural Economy

2.1 Agricultural Economy

Agriculture plays a dominant role in Ghana's economic growth—accounting for around 33% of the GDP (refer to Figure 2.1) and accounts for at least 60% of the workforce, who are mainly small landholders (GhanaWeb, 2010). The Ghanaian Ministry of Agriculture claims that 90% of farm holdings are less than 2 hectares (ha) in size, with an average size in the western region to be slightly higher at around 5 ha (IFPRI, 2007). A majority of these farms are traditional rainfed systems, where in 2000 only 0.5% (or 30,900 ha) of cultivated land was equipped for irrigation, and therefore a majority of these farms are vulnerable to any weather variability (FAO, 2005).

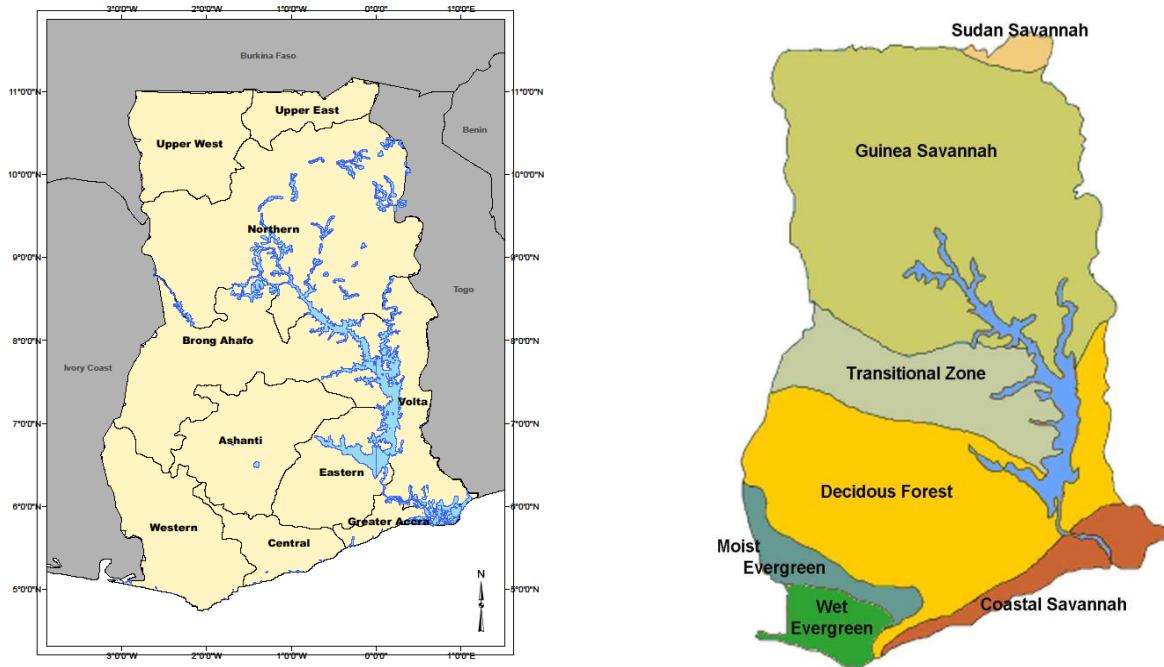
Figure 2.1: Economic structure of Ghana by sector (percent of GDP)



Source: World Bank dataBank (2010).

There are ten regions within Ghana and these regions consist of six agro-ecological zones, where traditional farming systems have developed over time. Referring to Figure 2.1, these zones are: Rainforest (listed on the map as moist evergreen and wet evergreen), Deciduous Forest, Transition Zone, Guinea Savannah, Sudan Savannah, and Coastal Savannah (FAO, 2005).

Figure 2.2: Regional Map and Map by Land Type of Ghana



Source: RESPTA (2010).

According to Asare (2010), Ghana has two different types of farming: cocoa and ‘other’. Cocoa is Ghana’s main cash crop and is the second largest cocoa exporter in the world, next to Côte d'Ivoire (Filou and Kenny, 2009). ‘Other’ crops are primarily produced from subsistence farming, with an exception of oil palm.

2.1.1 Cocoa Production

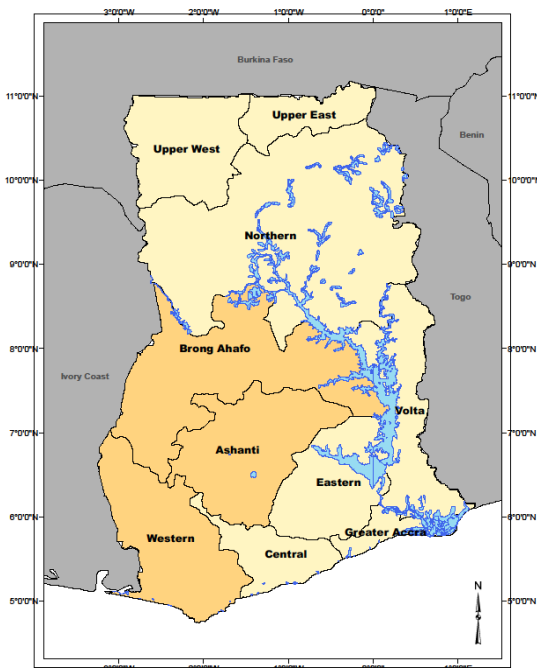
Total cocoa production has almost doubled in recent years from 395,000 tons in 2000 to 740,000 tons in 2005, contributing 28% of agricultural growth in 2006 (Bogetic et al, 2007). This growth, which was in response to world prices and increased world demand for cocoa, has led to an expansion of cultivatable land for cocoa—especially into the high forest zone (HFZ) that consists of the deciduous forest, wet and moist evergreen ecological areas.

Cocoa thrives in regions around the equator with high humidity, ample rainfall, humidity and year round heat. This makes countries like Ghana ideal for its production. Cocoa farming is predominately in Ashanti, Western, and Brong Ahafo regions (as shown in Figure 2). Cocoa is characterized by a much longer production cycle than other tropical crops: new hybrid varieties need at least five years to come into production and 10-15years for the tree stock to reach its full bearing potential (ODI, 2007). Upon maturity, cocoa trees could live up to 40 years with harvesting of seeds every 5 to 6 months (World Cocoa Foundation, 2010).

Within the last few decades was an increase in access to pesticides and fertilizers, as long as these agricultural inputs are used properly there are positive productivity effects. Overall, despite the increase in cocoa production and increase use of agricultural inputs, there have been decades of decline in cocoa yield per acre due to shifting cultivation practices.

There are two distinct ways to grow cocoa: traditional shade-grown or sun-grown. The latter has dominated over the traditional system because sun-grown has been made attractive due to high cost of land re-use; low cost of forest expansion; and higher yields within shorter cycles. However, sun-grown cocoa is extremely intensive on the land (quickly stripping soil nutrients), where “newer plantations are often abandoned” and “replaced with newly deforested land” emitting even more carbon into the atmosphere (Filou and Kenny, 2009). Figure 2.3 illustrates the main cocoa growing region in Ghana, which predominately covers the HFZ.

Figure 2.3: Main Cocoa Growing Area in Ghana



Source: Cadbury (2010).

Shade-covered cocoa¹ is more expensive and takes more time to maturity. The long-term tradeoff is that, shaded cocoa is a sustainable practice; it saves the land from degradation and soil erosion while at the same time conserving greenhouse gas (GHG) emissions (Katoomba XV, 2009). In the last decade, the increase in production of cocoa has been as a result of the access to fertilizer as well access to cheaper farmable land-forests.

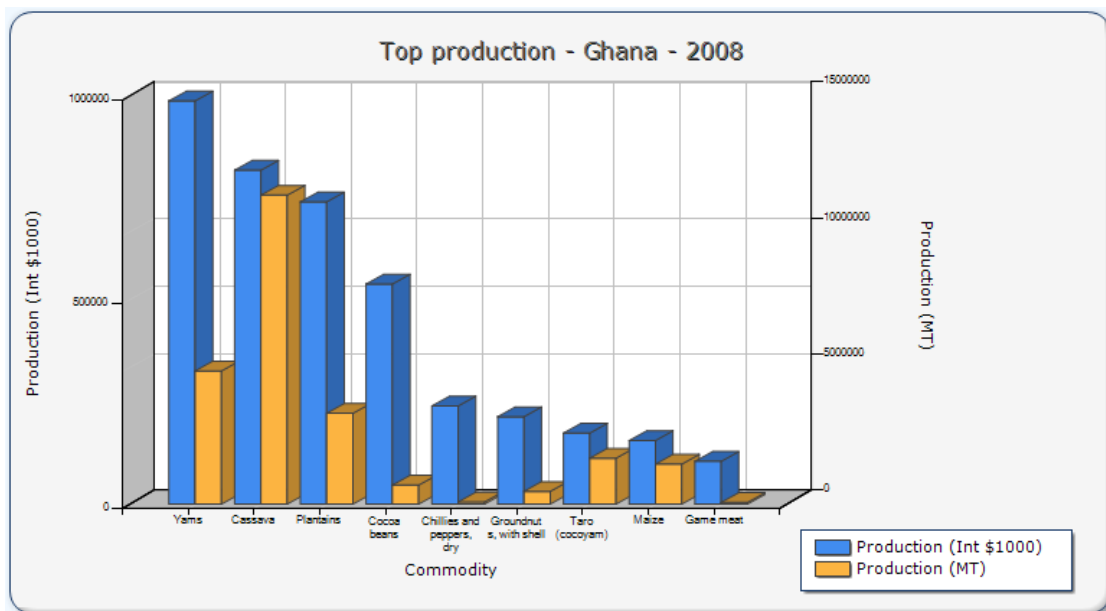
¹ Shade-covered cocoa is defined as cocoa tree with at least 30 percent canopy cover (World Cocoa Foundation, 2010).

The Ghana Cocoa Board (COCOBOD) emerged in 1947, and it encourages and facilitates “the production, processing and marketing of good quality cocoa, coffee” (COCOBOD, 2010) Overall this institution plays the role of price regulator and controls the export for all of Ghana’s cocoa. Annually, at the beginning of the season, COCOBOD determines the selling price of cocoa seeds per ton to be harvested that year—protecting farmers from the volatility of cocoa in the world market. Currently, cocoa world prices are over \$2500 per ton, but the COCOBOD is buying cocoa from Ghanaian farmers at \$1000/ton (COCOBOD, 2010).

2.1.2 Other Crop Production

Although cocoa is the main cash crop, there are a number of other food crops grown in Ghana, where the farmers practice shifting cultivation (including slash and burn). Appiah et al. (2009), according to a survey of 431 households from three different forest districts, found that Ghanaians were “heavily dependent on their farming practices and forest products for their subsistence”. In 2008, the top ten production for food in Ghana were, by ranking: Yams, Cassava, Plantains, cocoa beans, chilies and peppers (dry), groundnuts (with shell) taro, maize, game meat, and chilies and peppers (green) (FAO, 2010).

Figure 2.4: Ghana’s top crop production in 2008



Source: FAO (2010).

A majority of these food products are either locally sold or mainly for subsistence. In terms of a dollar value, cocoa beans and refined sugar are the largest exports for Ghana in 2007 (FAO, 2010).² Whether it is for a major cash crop or subsistence farming, poor agricultural practices continue to be a serious problem for Ghana’s forests – especially with legislature in place, like the Concession Act of 1962, which

² 2007 is the latest year that FAOstat provides for Ghana.

have played a dominant role in hindering forest protection by smallholder farmers as they believe they have no rights to the forest resources. However, farmers have expressed willingness to remain on their land, and not continue deforesting, if there were ways to increase output per unit area (Appiah et al., 2009).

2.2 Agricultural Organizations

As a result of barriers to credit and market input and output, smallholder farmers in Ghana have been largely involved in Farmer Based Organizations, and less so in Agricultural Coops. These types of organizations are used as a means for collective action commonly pursued as a way to improve credit recovery through peer pressure; empower farmers to obtain external support; and manage common natural resources (IFPRI, 2010). As for agricultural coops, there are really only two that currently exist. A number have formulated in the past, however failed to remain as a group. However, these one of the two coops has been successful within the last 2 years. Overall, this coop covers 20,000 farmers and has a repayment rate 98 percent on all of its loans (Asare, 2010).

FBOs seem to be relatively more successful than agricultural coops, in terms of formulation but they are still institutionally weak (FBO, 2006). On average these organizations consist of 18 members who belong to the same community, and elect a head who communicates on their behalf to the Ministry of Agriculture (MoA) and the banks from which they obtain credit.

International organizations such as the World Bank, IMF and NGOs have encouraged such organizations for technical and monetary reasons. The World Bank alone has invested US\$9 million towards the development of FBOs as a part of its Agricultural Services Sub-sector Investment Project (IFPRI, 2010). Since the 1990's, there have been a total of 7,748 FBOs; and of those, 2, 200 FBOs are in the major cocoa-growing regions – Ashanti, Western, and Brong Ahafo (IFPRI, 2010; IFPRI, 2007).

2.3 Influences of agricultural activities and distribution of benefits

There are a number of conventional and customary laws that appear to exacerbate deforestation rates in Ghana, especially due to agricultural expansion. Due to the complex nature of Ghana's tenure system, many rules and regulations become unclear, while the distribution of revenues from stumpage fees explicitly leave out those that would bear the brunt of the costs from any damages accrued from the felling of trees.

2.3.1 Land tenure

In most developing countries, the land tenure systems are quite complicated due to conflicting nature between customary and conventional laws. As for Ghana, it predominately follows a traditional customary land tenure system (Otsuka et al, 2003). Customary land acquisitions vary from region-to-region, where they either follow a matrilineal or patrilineal system; therefore it is quite difficult to make generalizations across all regions on certain aspects of land tenure rights. However, often land is held communally, where it is managed by traditional leaders or elders – referred to as “stools” (in the south)

or “skins” (in the north); where this type of communal land management accounts for roughly two-thirds of Ghana’s land (Katoomba XV, 2009). Table 2.1 provides a general description of each land tenure category for Akan ethnic groups (who live within the High Forest Zone). This table demonstrates the intricacies of Ghana’s land tenure system. It is critical to note that this system is somewhat different among other ethnic groups – adding another level of complexity to understanding the land tenure system in Ghana.

Table 2.1: Akan Ethnic Group Land Tenure System

LAND TENURE CATEGORY	DESCRIPTION
Family Land	In a matrilineal inheritance system, land is transferred to a deceased man’s matrilineal relatives (brothers or nephews), but not to his wives or children. In a patrilineal system, land is transferred from fathers to sons. Land can also be temporarily allocated to matrilineal family members, as in the case of a family landholder transferring land to his niece or cousin for food crop production or cocoa cultivation
Village Land	Land owned by the customary authority or Stool can be given to community members for cultivation.
Purchased Land	Land owned by the Stool can also be sold to individuals. This was more common when forest lands were in abundance.
Gifted Land	The giving of gifts developed as a way of circumventing matrilineal inheritance system (most common among Akan ethnic groups). Legally, under PNDC Law 111, a portion of a person’s estate goes to the spouse(s) and children; however, this does not necessarily apply to ‘family land’. Farmers have used this option to intentionally give land to spouses, children, or other relatives.
Share-cropping/Renting	Migrant farmers rent parcels of land from landowners. In the case of cocoa, the renter is obliged to clear the designated area and plant it with cocoa. Once the trees are mature, the parcel is either divided evenly (<i>Ebunu</i>) or in a 2:1 arrangement (<i>Ebusan</i>) between the landowner and tenant, and for the duration of the life of the cocoa the renter retains strong user rights. Renting can also occur on a seasonal or short-term basis when land is rented to plant food crops.
Caretaking	Men work as caretakers of mature cocoa farms for which they receive one third of the harvested crop.
Borrowed Land	This refers to land that is borrowed from non-relatives.

Source: Asare (2010); Otsuka et al (2003).

In addition to the complexity of the customary land tenure system, present legislature provides disincentives to farmers who may want to practice sustainable land management in terms of conservation. The Concession Act of 1962 forbids farmers from felling trees for economic reasons and revenue from the felled tree is divided up disproportionately (IFPRI, 2007). This is further discussed in the following section. Despite the law forbidding farmers to fell trees for a monetary gain, farmers do have the right to fell trees strictly to pursue agricultural activities. Both of these laws mentioned encourage farmers to clear-cut the land without any thought about the benefits that a tree may have on the land (e.g., reduce soil erosion, retain important nutrients, etc.) or the social costs. However, farmers

do have the right to any trees that they plant, according to law. On the other hand, if there is an economic value on the tree, the stool can claim rights to any trees planted by the land user. Therefore, farmers' rights' to land is limiting and these legal issues lead to higher deforestation rates.

Overall, the availability of cheap land deters most farmers from getting involved with tenure systems (and given the complications and lack of ownership over key aspects of the land); instead they go deeper into the forests (Katoomba XV, 2009).

2.3.2 Benefit Sharing

Benefit sharing in Ghana's case is based upon a regulated distribution of the revenues from stumpage fees. In other words, fees that are charged to the timber company who wants to fell trees on public or private lands.

Ghana has three distinct types of forests, which are classified into zones: High-Forest Zone (HFZ), Transitional Zone, and the Savannah Zone. Referring back to Figure 2.1, the HFZ predominantly covers the southern region and consists of deciduous forest (yellow), moist evergreens (blue), and wet evergreens (green). The savannah zone dominates the north, consisting of the Sudan savannah (peach), Guinea Savannah (tan), and also the coastal savannah (brown) in the south-eastern part of Ghana. The transitional zone (grey) is within the central part of Ghana, separating the north from the south.

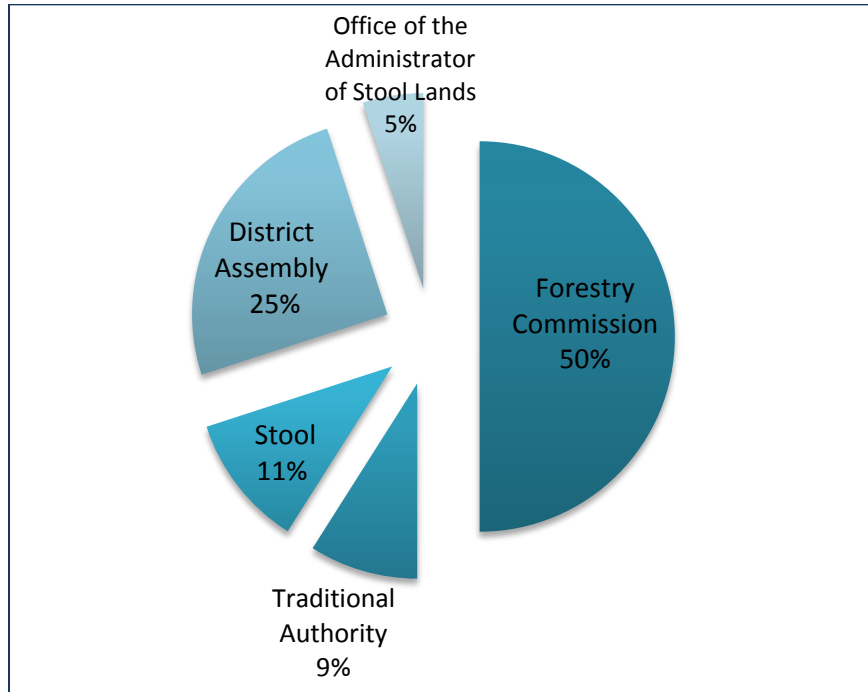
Forests are further classified into whether they are located *on-reserves* or *off-reserves*. There are a total of 216 forest reserves that cover 1.7 million hectares (ha) in the HFZ (GFC, 2010). This is 7% of Ghana's total land area. Forest cover that is located *on-reserves* is typically protected from deforestation, while the opposite is the case for *off-reserve* forests. It is important to note that the former is not 100 percent protected lands, where roughly 45 percent of forest reserves are open to 'sustainable' timber harvesting and the remaining 55 percent are considered 'protected areas' (GFC, 2010). Given these figures from Ghana's Forestry Commission, 4% or 935,000 ha of Ghana is fully protected from deforestation and degradation. These protected areas consist of 7 National Parks, 4 resource reserves, and 5 wildlife sanctuaries (Ghana's Wildlife Division, 2009). As for *off-reserve* land, very little of the high forest remains – with only 40,000 ha today (Mason, 2010).

According to the Deputy Minister Kamel (2010) of Land and Natural Resources, private institutions negotiate revenue given before a tree is felled to compensate for damages. This law is known as the Timber Resources Management (Amendment) Act of 2002, where "No timber rights shall be granted...without the written authorization of the individual, group, or owners" (FC, 2009).

There is a revenue sharing system in place by the FC for all revenues generated from stumpage fees (charged to loggers by the FC) *on* and *off* forest reserves; where this system is based on Section 267 (Sub Section 6) of the 1992 Ghanaian Constitution (FC, 2010b). Stumpage fees are divided equally between the FC and the FC's Office of Administration of Stool Lands (OASL) (on a 50-50 basis). The OASL is responsible for managing the proceeds of revenues to the *on* and *off-reserve* overseers of the forests, and the OASL's divides its portion of the revenue (50 percent) in three ways: 11 percent to the stool (or

on-forest reserve overseer), 25 percent to the district assembly, and 9 percent to the Local Traditional Council (FC, 2010b; Asare, 2010).

Figure 2.2: Distribution of Stumpage Revenue



Source: Asare (2010); FC (2010b).

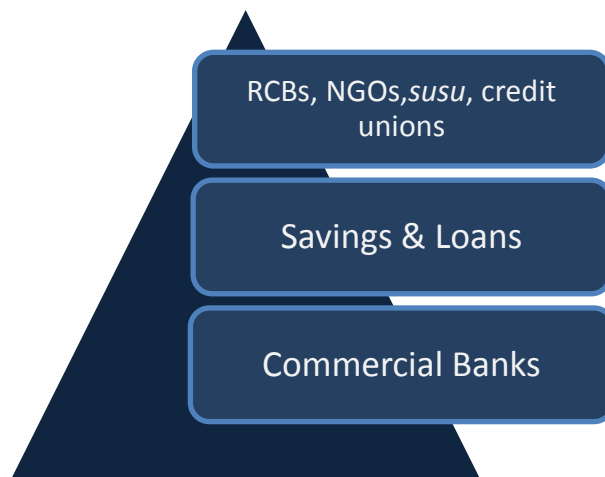
It is expected of the stools to give a percentage of the revenues received to the landowners/users according to the Forestry Commission (Kwakye, 2010). However, since there is no legal binding for the stools to distribute funds accordingly, it is unclear whether any of the monetary benefits are distributed to those who bear any burden if crops are damaged or destroyed during the felling of trees.

Chapter 3: Rural Finance System

The financial institutions in Ghana can be classified into three categories: formal, semi-formal and informal. The formal finance sector is predominately made up of commercial banks, which are normally within urban areas; and for rural areas there are Rural Community Banks (RCBs) and their association the ARB Apex Bank. Ghana's semi-formal finance sector consists of credit unions, savings and loans (also known as Microfinance institutions), and non-governmental organizations (NGOs). The informal finance sector consists of moneylender, traders, family, friends, neighbors, and the traditional *susu* system. Although the *susu* system is considered to be an informal system, the collectors within this system use RCBs and at times work within the RCBs. Therefore, the line between informal and formal for the *susu* system is not as evident. Overall, RCBs are the main financial system that smallholder farmers are able to access in which adequate and equitable services are provided.

Figure 3.1 represents the formal and semi-formal financial institutions (with exception of *susu*) and their corresponding portfolio sizes, where commercial banks have the largest portfolios and therefore are at the base of the pyramid. Savings and Loans' portfolios are not large enough to be categorized with commercial banks and do provide some financial services to smallholder farmers. RCBs, NGOs, *susu*, credit unions address the financial services for those with much smaller needs.

Figure 3.1: Ghana's Financial Structure



Source: Gyamfi (2010).

3.1 Formal financial sector: Apex and Rural Community Banks

Financial institutions that fall into this category are incorporated under the Companies Code 1963 (Act 179), which gives them legal identities as limited liability companies, and subsequently licensed by the Bank of Ghana under either the Banking Law 1989 or the financial Institutions (Non-Banking) Law 1993 to provide financial services under Bank of Ghana regulation (Steel and Andah, 2003). Most of these banks target urban, middle-income clients and higher net worth clients; however Rural Community Banks and the Agricultural Development Bank concentrate their focus within rural areas. Therefore, these two institutions have become the main source of financial resources for smallholder farmers.

3.1.1 Rural and Community Banks

Within the formal financial system in Ghana, Rural Community Banks (RCBs) are currently the largest service providers in rural areas. They operate as commercial banks under the banking law, except they cannot undertake foreign exchange operations, their clientele is drawn from their local catchments area, and their minimum capital requirement is significantly lower (Steel and Andah, 2003).

Before RCBs were first initiated in 1976, formal financial institutions for those living in more remote, rural areas were very limited (Nair and Fissaha, 2010). Typically, rural dwellers would rely on moneylenders and traders whose interest rates were astronomical³, or family, friends, or neighbors who were rarely able to provide adequate funds. These types of banks are owned by members of the rural community through purchase of shares and are licensed to provide financial intermediation in rural areas. Their mission is to expand savings mobilization and credit services in rural areas not served by commercial and development banks. Initially, they made standard commercial loans to individuals or groups often related to agriculture. Currently, RCBs seems to loan about 9 percent of their portfolios to agriculture, forestry and fishery. The remaining distribution of loans across major sectors is as follows: 41 percent to trading; 42 percent to personal loans; 6 percent to the cottage industry; and the remaining 3 percent to transport (Nair and Fissaha, 2010).

RCBs primary services are savings, credit, and money transfers and payments. Savings products include: regular accounts, current accounts, and *susu* deposits (Nair and Fissaha, 2010). The unique deposits from *susu* collectors (who are mostly men) are small savings that are collected by going door-to-door (Nair and Fissaha, 2010). Within the last several years RCBs (and other banks) have linked up with *susu* collectors in order to mobilize deposits from clients; and in some cases these collectors have been hired as regular bank staff (Nair and Fissaha, 2010). This is similar to banks housing credit unions, where they use them as agents to find prospect clients (Gyamfi, 2010).

³ According to Ofori (2010), it is not uncommon to have interest rates from these types of lending services to be greater than 100 percent.

There are several different types of credit products that RCBs distribute within rural areas: microfinance, *susu*, salary, and commercial. Details, including loan amounts, interest rates, and loan times are described in Table 3.1.

Table 3.1: Major Credit Products from RCBs

LOAN TYPE	DESCRIPTION
MICROFINANCE LOANS	These loans are provided to groups of individuals to finance small and micro income-generating activities. For some banks, the groups is the borrower, whereas for others, each member of the group is a borrower. In both cases, the group is jointly liable for the loan. The size of microfinance loan ranges between GHc 50 and GHc 1,000; most loans are between GHc 100 and GHc 500. The term of a microfinance loan is four to six months, and the interest rate ranges between 30 and 36 percent.
SUSU LOANS	These loans are provided to individuals following a three-month <i>susu</i> deposit. The size and term of <i>susu</i> loans are similar to those of microfinance loans, but <i>susu</i> loans are provided to individuals whereas microfinance loans are group loans.
SALARY LOANS	These loans, provided to salaried individuals, are secured by the individual's salary, which is paid through the bank. The bank automatically deducts the loan repayment installment from the salary payments. Salary loans are used for consumption and investment, as well as social purposes. The size of the loan is determined by the salary of the borrower. The maximum term of a salary loan is 48 months, and the interest rate ranges between 30 to 33 percent.
COMMERCIAL LOANS	These loans are provided to companies and individual entrepreneurs for working capital or fixed capital. The maximum loan size is GHc 100,000, the maximum term is 36 months, and the interest rate ranges between 28 to 35 percent.

Source: Nair and Fissha (2010).

As reported by ARB Apex Bank (2008), there are 125 RCBs with 439 branches. However, more recent sources state that there are 127 (Nair and Fissha, 2010) or 135 (Gyamfi, 2010). The general lending methodologies of the RCBs include: Group savings with credit, group and individual savings with credit, individual savings with group credit and individual savings with credit (Steel and Andah, 2003). The group savings and credit methodology consist of group of members who open a joint bank savings account and mobilize initial savings deposits to qualify for a loan. Group savings may also be used as security against loans. This methodology however, has not been very successful due to group formulation issues based on perceptions of the loans, lack of monitoring, and the way in which the groups were formulated. Loans were thought as "free money" from the government and therefore default rates were very high (Alhassan, 2010). In addition to this perception of loans, groups were not formed amongst themselves, rather chiefs saw an opportunity and gathered people together to form groups (Asare, 2010). Therefore this did not have the same peer monitoring system as we see with the widely used Grameen model. Another issue with these group formulations were that they were able to dissolve and then join another group without any repercussions; meaning that monitoring was less than adequate. To a lesser extent weather variability explained the high default rates.

3.1.2. ARB Apex Bank

ARB Apex Bank emerged in 2001 because rural banks needed an institution that would provide common financial, managerial, and technical support (Nair and Fissaha, 2010). This association of rural banks acts as mini central bank for the RCBs to address operational bottlenecks of the rural financial sector with the aim of broadening and deepening financial intermediation in the rural areas especially for agricultural financing (ARB APEX, 2010). Apex bank provides the following services for RCBs:

- Check clearing;
- Specie supply;
- Treasury management;
- Loan fund mobilization;
- Domestic and international money transfers;
- Information and communication technology;
- Training;
- Inspection and audit (Nair and Fissaha, 2010).

As part of its services, Apex Bank also oversees all portfolios of the RCBs.

3.1.3 Agricultural Development Bank

The Agricultural Development Bank (ADB) is the first development-based financial institution established by the Government of Ghana (GoG), and continues to be a government-owned bank. ADB is a medium-sized development and commercial bank. The ADB's shares consist of 49 percent is owned by the Bank of Ghana and 51 percent is owned by the Ministry of Finance (Alhassan, 2010). In order to support agricultural activities in Ghana, the bank is not required to pay tax by the government. After independence in 1957, all commercial banks were required to meet a quota, where a ¼ of all loans were for the agricultural sector. This changed in the 1980's, where this mandate was lifted. With the creation of the ADB, 100 percent of its loanable portfolio funds went to agriculture. However, in 2004 the GoG decided to make ADB a universal bank and therefore forced to compete with private banks. From this reform, ADB had dropped the amount of loans given out to the agricultural sector to only 25 percent (compared to 100 percent previously) (Alhassan, 2010). Although this is a considerable drop, Alhassan (2010) made a point to note that this still covers roughly 80 percent of the nation's agricultural finance. ADB aspires to reach a goal of expanding its agriculture loanable portfolio funds to 40 percent by the end of 2012 (Alhassan, 2010). In addition to expanding its agricultural portfolio, ADB recognizes that a majority of farmers use traditional rainfed systems, and are highly vulnerable to weather variability. Therefore, it is pursuing insurance options for farmers with the facilitation of GTZ (a German government supported organization that promote sustainable development).

ADB executed an integrated financing scheme for smallholder farmers, which is coming to an end of the pilot phase⁴. This is a unique program because it involves crediting or debiting accounts but not physical cash transfers—essentially, the ADB is in charge of overseeing farmer and suppliers' activities to insure that products are sold at a reasonable price and that they are used effectively. Within this program the ADB supplies subsidized fertilizers (by 40 percent), subsidized agricultural equipment (by 25 to 35 percent), and provides training to farmers to increase human capacity (Alhassan, 2010). It is hoped that

⁴ A program evaluation will be conducted starting in January 2011 by researchers from Yale University.

this program is effective and can be scaled at a national level.

3.2 Semi-Formal Financial Sector: Financial NGOs, Credit Unions, and Savings and Loans

Semi-formal institutions in Ghana consist of credit unions, savings and loans associations, and financial NGOs. Credit unions are organizations that offer savings and credit facilities exclusively to its members. However these organizations are performing poorly because a majority of their focus is on welfare programs, and therefore cannot impose higher interest rates on their clients (Steel and Andah, 2003). The credit union association (CUA) is similar to ARB Apex Bank however it does not have any control over portfolios. There are some credit unions that operate within banks whose tasks are to look for clients and to report back to the bank (Gyamfi, 2010).

There are a total of 47 Savings and Loans reporting institutions Ghana. As of 2009, services from Savings and Loans are provided to 358,717 borrowers, with an average loan balance of US\$ 290.9 per borrower (MIX Market, 2010). According to Mix Market there are 47 reported microfinance institutions in Ghana.

Ghana's Savings and Loans have 6 percent of portfolios at risk for more than 30 days. This is the at-risk average compared to its peer groups with East Asia and the Pacific at 4 percent, Eastern Europe and Central Asia at 4 percent, Latin America and the Caribbean at 5 percent, Middle East and North Africa at 3 percent, and South Asia at 2 percent (MIX Market, 2010). One Savings and Loans bank that is outperforming all the rest is Sun Trust Bank. This institution is very transparent about the business and has been able to retain very large portfolios (given the size of portfolios, this bank might become commercialized) (Gyamfi, 2010). Therefore, there needs to be a further investigation into this bank to understand how it has achieved such a successful portfolio performance while others have been dragging.

3.3 Informal Financial Sector: Moneylenders, Traders, *Susu*, and Other

The informal financial sector consists of moneylenders, traders, *susu*, and other forms of credit like family, friends, and neighbors. The two most important players for rural finance within this structure are the *sususes* (savings collections) and traders.

The *susu* system is a traditional savings collection system, and is through to have originated in Nigeria and came to Ghana in the early twentieth century (Asiama and Osei 2007). Currently, there are roughly 4,032 *susu* collectors and clubs that operate within Ghana (UNCDF, 2008). There are at least five different types of *susu* institutions: collectors, associations, clubs, companies, and some licensed financial institutions that offer a *susu* savings plan. Table 3.2 provides an overview for each of these different types of *sususes*.

Table 3.2: *Susu* Institutions within Ghana

TYPE OF <i>SUSU</i> INSTITUTION	DESCRIPTION
<i>SUSU</i> COLLECTORS	These are individuals who collect daily amounts set by each of their clients (e.g., traders in the market), and return the accumulated amount at the end of the month, minus one day's amount as a commission.
<i>SUSU</i> ASSOCIATIONS	Also known as mutualist groups, there are of two types: 1) a rotating savings and credit association (ROSCA), whose members regularly (e.g., weekly or monthly) contribute a fixed amount that is allocated to each member in turn (according to lottery, bidding, or other system that the group establishes); 2) accumulating, whose members make regular contributions and whose funds may be lent to members or paid out under certain circumstances (e.g., death of a family member).
<i>SUSU</i> CLUBS	These are a combination of the above systems operated by a single individual, in which members commit to saving toward an individually decided amount, either a 50- or 100-week cycle, paying a 10 percent commission on each payment and an additional fee when they are advanced the targeted amount earlier in the cycle. These clubs have existed at least since the mid-1970s, quite possibly earlier.
<i>SUSU</i> COMPANIES	This type of <i>susu</i> institution began in the late 1980s as registered businesses whose employees collected daily savings using regular <i>susu</i> collector methodologies, but were promised loans (typically twice the amount saved) after a minimum period of at least six months.
LICENSED FINANCIAL INSTITUTIONS	These institutions (commercial banks, insurance companies, RCBs, S&Ls, and credit unions) have offered a systematic savings plan termed " <i>susu</i> ," sometimes hiring employees to go out and gather the savings in the manner of a <i>susu</i> collector. The State Insurance Corporation first introduced such a "Money Back" product in the 1980s, including a life insurance benefit for clients as an additional incentive to mobilize savings, but the scheme was discontinued in 1999.

Source: Steel and Andah (2003).

There has also been growing linkages of *susu* with the formal sector and NGOs in Ghana to provide financing services in Ghana's rural areas. The main purpose is to succeed both in mobilizing savings from lower-income households and giving them access to financial services that are part of the formal system through the combination of licensed financial institutions and traditional methodologies. Few of the most successful examples include Citi S&L, Nsoatreman Rural Bank and First Allied S&L. The scheme usually works primarily through *susu* club operators, with services that include receiving their weekly collections and making loans to the operator. These methodologies have been particularly effective in reaching lower-income brackets and women, who constitute 65 percent to 80 percent of the clients of these *susu* schemes (UNDCF, 2008).

Traders have also been a major component of rural finance in Ghana, who operates between producers in rural areas and urban markets. They provide credit in the form of inputs on supplier's credit or an advance against future purchases of crops. Traders do not usually require collateral, but rather the agreement of the farmer to sell them crops over an agreed period (Steel and Andah, 2003).

These growing linkages with credit unions and susu collectors provide an important foundation for greater outreach to rural clients. RCBs serve to provide a decentralized network of licensed financial institutions in rural areas, while the semi-formal and informal institutions provide the grassroots orientation to reach the relatively poor, lower income clients with small transactions.

3.4 Performance: Is this financial system adequately reaching smallholder farmers?

Within the last few decades rural communities have created hundreds of these institutions with little financial support from the government. With this success, there has been a steady increase in access of banking systems to rural communities, where RCBs have been the main supplier of financial services to smallholder farmers. As of 2008, RCBs have reached 2.8 million depositors and 680,000 borrowers – compared to the more globally popular institutions of microfinance, in Ghana this banking system accounts for 1.3 million depositors and 358,717 borrowers (Nair and Fissaha, 2010). Despite the rapid growth of RCBs and their ability to have the largest market share of clients based in rural communities, there has been a mix of financial performance across these rural institutions.

In the 1980's the Bank of Ghana (BoG) recognized the deterioration of RCBs, and instituted financial reforms. According to Nair and Fissaha (2010), these reforms included a restructuring of "sector-specific credit quotas⁵ and a reduction in agricultural loans, increases in primary and secondary reserve requirements, closure of distressed banks, and a stronger role for the BoG in examination and control of the banks". In addition to these reforms the World Bank created a Rural Finance Project (RFP) from 1989 to 1994, aimed at strengthening the rural finance sector through the provision of technical assistance for restructuring 80 RCBs and strengthening the ARB as well as credit unions (Nair and Fissaha, 2010). Despite these efforts throughout the 1980s and into the early 1990s, RCBs continue to face institutional problems that inhibit their services to smallholder farmers. These issues include: framework problems based upon rules and regulations, structural gaps, and their sustainability to continue providing services to rural communities.

3.4.1 Framework problems

Although RCBs are lauded for their rapid expansion among the rural communities, this also brought a number of challenges due to limitations within the regulatory framework. The BoG supervises RCBs through its Banking Supervision Department (BSD), where RCBs are responsible for submitting monthly, quarterly, and annual returns; and the BSD is responsible for annual on-site supervisions (take an average of 5 days for each bank) (Nair and Fissaha, 2010). However, the BSD has been unable to sufficiently perform its duties as supervisors due to manpower constraints and the expansion of RCBs into more remote locations. Therefore, responsibilities of the RCBs have not been enforced and the BSD is unable to visit all of the rural banks annually.

⁵ With this new quota, RCBs were mandated to restructure their loan portfolio to 50% toward agriculture, 30 percent to cottage industries, and 25 percent to other activities (Nair and Fissaha, 2010).

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Since the BoG was unable to provide the necessary supervision over the RCBs, in 2006 a law was enacted that allowed the BoG to delegate some of the supervisory tasks to ARB Apex bank. Therefore, the following functions were passed to Apex bank:

- Maintain primary cash reserves of rural can community banks in accordance with relevant rules, regulations, and policies;
- Monitor, inspect, examine, and supervise rural and community banks in accordance with relevant rules, regulations, and policies;
- Lend to rural and community banks facing temporarily liquidity problems;
- Provide specie management and specie movement services. (Nair and Fissaha, 2010)

Although BoG passed on a majority of the supervisory power to Apex bank⁶, it failed to also pass along the financial resources that it has access to (within its own institution and the Government of Ghana) in order to perform such tasks. Therefore Apex has financial constraints on providing effective supervision, and is unable to pass the costs onto the RCBs themselves due to regulation that prohibits such activity for any bank (Nair and Fissaha, 2010). As mentioned earlier in this chapter, Apex Bank is owned by the RCBs and therefore the ability for such an institution to properly regulate these rural banks has been called into question since this legislation was passed four years ago.

In addition to the problems with supervision over RCBs, there are a number of services that these banks need access to in order to function properly—which in this case they do not due to financial constraints. Services that are not offered at reasonable cost in the market are:

- Shareholder registry management and shareholder education;
- Internal audit services – most of the rural banks are too small to attract good internal audit staff;
- Product development services;
- Strategic advisory services including risk management;
- Technological upgrades besides computerization;
- Loan syndication services. (Nair and Fissaha, 2010)

Not only does regulation inhibit RCBs from functioning properly but this is also stymied by limitation of market services that banks need in order to perform optimally. Without these basic banking framework problems addressed, RCBs will continue to perform poorly—limiting their ability to provide adequate services to smallholder farmers.

⁶ The BoG still holds some supervisory power over the RCBs, where they continue to conduct both on-site and off-site supervision (Nair and Fissaha, 2010).

3.4.2 Structural gaps

Although RCBs have the largest share of clients within the rural communities, there are still a number of areas where financial services are not adequately reaching those in need. According to Gyamfi (2010), there are several regions where financial services are greatly lacking for small holder farmers—Brong Ahafo, Northern, Upper East, Upper West, and Volta. Table 3.1 shows the distribution of RCB head office banks and their branches by region as well as coverage ratio.

Table 3.1: Estimates of Farmer per RCB by Region

	REGION	NUMBER OF BANKS	NUMBER OF BRANCHES	NUMBER OF FARMERS BY REGION	NUMBER OF FARMERS PER RCB BRANCH + HEAD OFFICE BANKS
1	ASHANTI	22	111	525713.5172	3952.73
2	BRONG AHAFO	19	69	358348	4072.14
3	CENTRAL	21	68	203461	2286.08
4	EASTERN	21	85	405128	3821.96
5	GREATER ACCRA	6	13	156610	8242.63
6	NORTHERN	4	3	344941.5	49277.36
7	UPPER EAST	4	10	310739	22195.64
8	UPPER WEST	4	3	70371	10053.00
9	VOLTA	10	22	323275	10102.34
10	WESTERN	14	55	296916	4303.13
	<i>NATIONAL</i>	125	439	2995503.017	5311.18

Source: Adapted from ARB Apex Bank (2008); MOFA (2010).

Figure 3.1: Percentage of total RCB Head Offices and Branches by Region

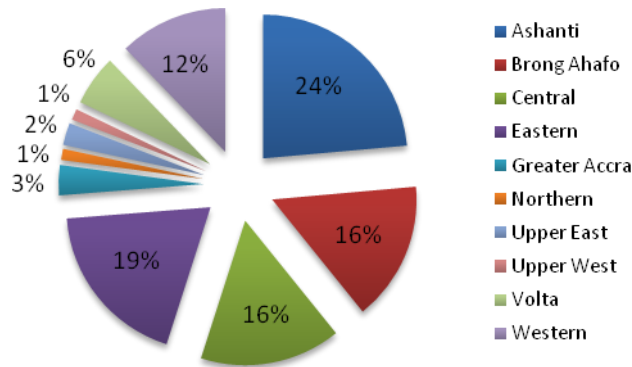
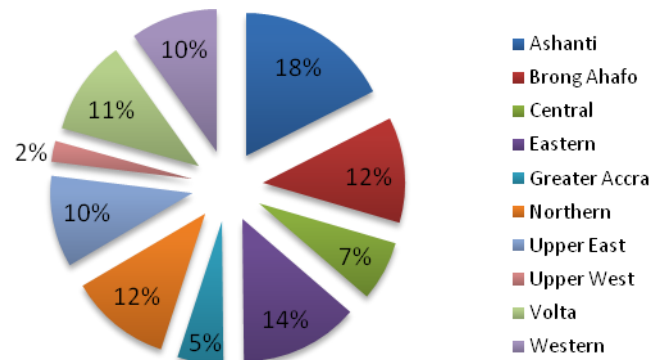


Figure 3.2: Percentage of Total Farmers by Region



Source: Adapted from ARB Apex Bank (2008); MOFA (2010).

The reported five regions that are significantly lacking financial services for farmers is confirmed with data from ARB Apex Bank (2008), RCBs by region, and MOFA (2010)⁷, number of farmers by region. According to these numbers, Brong Ahafo seems to be the only region mentioned by Gyamfi (2010) that has a little bit better coverage than some of the other regions – including Western and Greater Accra. The Northern region has only 1 percent of total RCBs, however it accounts for 12 percent of total farmers. Upper East region has slightly better coverage with 2 percent of the RCBs and 10 percent of farmers. Overall, it is evident that there is disproportionate coverage of rural banks based upon the number of farmers per region.

3.4.3 Sustainability issues

As stated in section 3.4.1, ARB Apex Bank is currently facing financial constraints due to the shift in supervisory power. Legislature limitations make it difficult for Apex Bank to provide services to RCBs in a sustainable manner and Apex Bank faces issues of financial stability while it provides low-cost services to RCBs (Nair, Ajai and Fissha, Azeb, 2010).

Overall the network of RCBs appears to be self-sufficient operationally and financially, however there continues to be poor performances among a significant number of them. Although reforms and programs were implemented to address these ‘failing’ RCBs, they still constitute about 15 percent of the total RCBs operating in Ghana (Nair, Ajai and Fissha, Azeb, 2010). This means that there are about 19 banks out of 127 that are very weak institutions, and once you factor in the number of branches that are affected by these poor performing banks that totals to around 67 financial structures (3.5 branches per

⁷ The data collected from both of these sources is from 2008.

bank) that are not functioning up to their potential. With a national average of 5,300 farmers covered per bank/branch, this means that 355,100 farmers are not provided adequate financial services on average.⁸

Due to lack of effective supervision across all RCBs, there are a higher number of loans that are in default compared to global peer groups. In 2008, in a sample of RCBs studied by the Nair, Ajai and Fissaha, Azeb (2010), around 16 percent of the RCBs loan portfolios were in default for more than 30 days and 3.5 percent were in default for more than a year.⁹ The latter percentage is striking because generally loans that are in default for more than a year are not paid back. Therefore, it is quite possible that RCBs are not gaining 3.5 percent of their expected revenue. Since these banks are relatively small financial institutions, this is quite a large proportion of its revenue; and regulation restrictions, lack of supervision, and low financial capacity leads to these poor performing portfolios – which lead to some of these RCBs to be insolvent.

⁸ This calculation solely based on the number of institutions that currently exist, and is not based upon the lack of financial coverage for farmers by region. In other words, there are even more farmers that do not have any access to financial systems

⁹ Compared to their global peer group, where only 3 percent were in default for more than 30 days and 1.5 percent were in default for more than a year (Nair and Fissaha, 2010).

Chapter 4: Alternative Sources of Funding for Farmers

In 2008, the Forestry Commission estimated that agricultural expansion was the culprit for half of the deforestation in Ghana. Since farmers continue to practice unsustainable farming techniques like shifting cultivation and there are gaps within the rural finance system, a number of alternative options are addressed; with a primary focus of farmers receiving financing while reducing deforestation and reducing poverty rates. Therefore, we look to how REDD-plus and other possible climate funds could provide alternative funding to smallholder farmers while increasing economic and environmental sustainability over time.

4.1 REDD-Plus in Ghana

Since the Bali Action plan provided a plan for REDD-plus readiness in 2007, and later becoming confirmed at Copenhagen, REDD-plus has been gaining momentum for eventual implementation in Ghana. In March of 2010, Ghana's Readiness Preparation Proposal (R-PP) was approved by the World Bank and donor countries. This proposal outlines Ghana's plan for the implementation of REDD-plus, and at the approval meeting in March US\$3.6 million was confirmed to be allocated to facilitate the REDD-plus readiness process. Currently, only US\$200,000 of agreed amount was allocated to Ghana, and the remaining US\$3.4 million is contingent upon the submission (and approval) of the social environment strategy assessment—which the Forestry Commission is planning to submit by the end of this year, December 2010 (Kwakye, 2010).

In addition to the US\$200,000, Ghana has received US\$80,000 for projects supporting REDD-related activities through the Forest Carbon Partnership Facility (FCPF), run by the World Bank. Ghana is currently in "stage 1" of the "REDD-plus readiness" stage, where key bodies that would be in charge of future REDD-plus funds and activities are designated key roles through the National REDD-plus Steering Committee. This committee is comprised of members within the GoG, NGOs, and the private sector, and is raising awareness about REDD-plus to key stakeholders in the country that would be affected by the program.

REDD-plus implementation, including funding for REDD projects through a CDM scheme, is set to begin operation by 2013 when Ghana becomes "REDD-plus Ready." However, before this program could take shape, key institutional players and potential legal, structural, and procedural problems need to be addressed. It is reassuring to hear that the Forestry Commission recognizes the potentially problematic areas if a REDD-plus initiative were implemented. According to Kwakye (2010), transparency of financial distributions of such funds is key, along with setting up clear arrangements for all stakeholders, building capacity, raising awareness, assessing institutional capacity, establishing rules for the private sector involvement, and, most importantly, addressing potential issues between leaser and farmer due to land tenure rights. There is still time to address some of the potential issues in order to ensure that the REDD-plus program is implemented smoothly in Ghana; and Ghana's process towards REDD-plus has shown a great degree of flexibility, which will certainly be needed for any future REDD-plus guidelines

and policies to be implemented as they descend from the international Climate Regime.

4.2 Climate funds for rural agriculture?

4.2.1 The World Bank

The Forest Carbon Partnership Facility is the primary program and fund to assist developing countries with REDD-plus implementation. The fund became fully operational in June 2008, and has two main objectives: 1) to assist a select group of countries in becoming “REDD-Ready” and 2) reward countries through verifiable reductions of emissions from REDD-plus approval programs that will later receive rewards through a future carbon finance mechanism. Currently, all REDD-plus activities in Ghana have been financed through the FCPF (see Table 4). To date, \$80,000 has been distributed as of October 2010, with \$3.4 million having been approved for REDD-plus activities in the fund. The fund is also assist through technical assistance and capacity building for REDD-plus implementation by the Forest Investment Program (FIP) fund, as discussed below (Climate Funds, 2010).

The Forest Investment Funds Program (FIP) of the World Bank and the Pilot Program for Climate Resilience (PPCR) is part of the World Bank’s Strategic Climate Funds set up to sponsor of specific pilot programs in Ghana. The PPCR is designed to help specific pilot projects and approaches to deal with the effects of climate change and other adaptation measures integrated into national development strategies, while the FIP, is designed to assist with the technical assistance to REDD-plus activities. Though no funds have been dispersed, Ghana was approved in July 2010 to receive funds for future pilot projects (amount uncertain) (Climate Funds, 2010b).

4.2.2 The Bio Carbon Fund

The BioCarbon Fund (BioCF) provides carbon finance for projects that sequester or conserve GHG in forests, agro- and other ecosystems. As a part of the Climate Finance Unit it is to reward projects that are can “prove” an amount of carbon has been sequestered. The fund has two tranches, the first one began in May 2004 with a total capital of \$53.8 million. The second tranche became operational in March 2007 with a total capital of \$36.6 million. BioCF objectives are to consider purchasing carbon from a variety of land and forestry projects, *including innovate ways to reward carbon sequestered through agriculture*. Currently the BioCF has three REDD projects in its Tranche One portfolio, including a Biodiversity Corridor in Madagascar that has been the first program rewarded for REDD-plus activities.¹⁰ Considerations for projects are currently underway for Tranche 2 and the BioCF has been developing, and according to the Carbon Finance Unit of the World Bank that oversees the BioCF:

...an innovate project-based REDD methodology which will be available soon. The methodology will allow for project developers to establish a project reference scenario and adopt monitoring measures for accurately assessing emission reductions from reduced deforestation resulting from the projects activities” (Carbon Finance Unit, 2010).

¹⁰Full List and Description of the Programs are available at www.wbcarbonfinance.org under “Bio Carbon Fund: About”

4.2.3 UN REDD Program Fund

Currently 13 countries are receive funds for the program, including three in Africa- Zambia (\$4 million approved, the DRC (\$7 million approved), and Tanzania (\$4 million approved) (Climate Funds Update, 2010). The Program has two components: (i) Assisting developing countries prepare and implement national REDD strategies and mechanisms; and (ii) Supporting the development of normative solutions and standardized approaches based on sound science for a REDD instrument linked with the UNFCCC. The program will help empower countries to manage their REDD processes and will facilitate access to financial and technical assistance tailored to the specific needs of the countries. Examples of areas of support include but are not limited to: alliance building and developing national planning processes; capacity support for monitoring and assessment tools (including forest resource assessments); creating dialogue; assisting in a national REDD strategy; and ultimately aligning REDD schemes with pro-poor and environmental policies (for income, employment generation, biodiversity, etc.) (Bank Information Center, 2010).

4.2.4 Africa Development Bank

As a part of the Africa Development Bank's Strategic Climate Strategy (which includes a partnership with the Forest Investment Program), the Pilot Program for Climate Resilience could be a source of funding to Ghana's agriculture in the future. The Pilot Program for Climate Resilience (PPCR) the PPCR is designed to help countries build their National Adaptation Programs of actions, which help fund public and private sector investments in adaptation plans. Currently the PPCR pledged resources amount to approximately \$967 million. PPCR is at work in nine pilot countries, including the African countries of Mozambique, Niger, and Zambia) (Africa Development Bank, 2010). In Zambia, the PPCR is focusing on increasing agriculture productivity, and the country has received \$1.5 million from the PPCR, and currently the country is working to mainstream agriculture development practices to receive more (Strategic Program, 2010).

4.2.5 USAID

USAID's REDD-relevant activities in Africa have been limited to three projects related to ecosystem protection in the Congo basin, looking into efforts for carbon sequestration in the Niger River in Mali, and training a team of experts to analyze carbon sequestration potential in Senegal. On carbon and climate finance front there are currently no projects in operation in Ghana, but these actions across the continent suggest possible ability for USAID to play a role in Ghanaian REDD efforts (USAID, 2010).

4.3 Agricultural Finance and Climate Projects in Ghana

There are a number of projects that World Wildlife Fund (WWF) could expand upon through collaborations, or piggy-back onto the most successful projects. Of the projects researched, the following could be considered for future REDD-plus funding. Note, though primarily being carried out by NGOs, there are some projects are being carried out by government bodies and private institutions. It is recognized that a multi-stakeholder approach is a necessity for any project involving rural finance and/or carbon offset projects, due to the interconnected nature that government policies would have on rural finance and the agricultural economy that would affect any instituted project.

- Forest Trends, Nature Conservation Research Centre (NCRC), and Katoomba have been working side-by-side, spearheading a three-part carbon offset pilot—supporting shade-grown cocoa. This pilot is estimated to cost roughly US\$5.5 million, and has already raised US\$1.5 million from international donors – such as Rockefeller Foundation and Rainforest Alliance (Katoomba Group, 2009).
- *NCRC (Ghana)*. Currently, NCRC is working with a few pilot Community Resource Management Areas (CREMAs), where a Katoomba Group scoping exercise (“REDD Opportunities Scoping Exercise”) found that extending CREMAs will provide the best possible solution for sustainable shade-free cocoa farming (Filou and Kenny, 2009). CREMAs is one way to overcome some of the land tenure issues by allowing communities to have more rights towards natural resources on their land – including trees.
- *Rainforest Alliance*. Fair Trade Certificate Program helps support cocoa farmers' rights through their fair trade certificate program (which Cadbury is doing for their cocoa farmers in Ghana), and promote sustainable cocoa farming by financially supporting Forest Trends, NCRC, and Katoomba Group cocoa-carbon initiative (Trading Visions, 2010).
- *Care International Projects*. This international non-profit has a number of projects that would facilitate the implementation of REDD activities in Ghana, and are implemented by the regional office in Accra. These projects include¹¹:
 - *Community Forest Biodiversity Project*: enhances biodiversity conservation through the establishment and management of a 450 ha of CREMAs.
 - *Forest livelihoods and Rights for Sustainable natural resource management (FOREST)*: addresses the inequitable distribution of benefit-sharing of forest resources within the HFZ.
 - *Sustainable Farming Systems Extension (FASE)*: increases rural farmers’ access to extension services that promote viable, sustainable agricultural practices.
 - *Conservation Agriculture Project (CAP)*: increases crop yields for subsistence farmers, in Northern Ghana, through sustainable management methods and post-harvest systems.
 - *Community Land Use Responses to Climate Change in Northern Ghana*: "reduce negative impact of desertification and climate change vulnerabilities on poor rural communities in Northern Ghana" (CARE, 2010).

¹¹ For further information about any of the projects mentioned, or other ones that CARE has in Ghana, visit: <http://www.care.org/careswork/countryprofiles/58.asp>.

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- *KASA - Natural Resource and Environmental Governance in Ghana: “reduce poverty through improved natural resource and environmental governance”* (CARE, 2010).
- *Earth Watch “Cocoa Farming and Biodiversity Project”*. Carried out by Earthwatch, Cadbury, Schweppes, the Nature Conservation Research Center and the Cocoa Research Institute, and was initiated in 2010 to expand a three years. The aims to increase farming yields and build community-led eco-tourism but has not fully been developed to date (Earth Watch, 2010).
- *ArborCarb & John Bitar Timber Company Reforestation Project*. ArborCarb is a British company that has initiated a reforestation pilot with Ghana's John Bitar Timber Company. These two companies are working with local farmers and land owners to reforest a once heavily deforested area (Shukman, 2009). It is envisaged that this pilot would increase carbon sinks by replanting millions of trees. Through this scheme, ArborCarb will be able to sell carbon offsets through voluntary carbon markets, and offer local landowners’ carbon credits as well (Shukman, 2009).
- *Ecobank Transnational Incorporated (ETI)*. ETI is a pan-African bank that was established in 1985. This bank has recently announced that it is prepared to “finance tradable emission reduction initiatives in Africa” (Ghana Incorporated, 2009). This bank is promoting the regulatory market of CDM's and sees this as a developing solution for Africa, which is plagued with poverty and adverse effects of climate change on these predominantly agrarian societies.

In addition to the projects mentioned above, there were also many projects that were mentioned by hosts throughout our fieldwork in Ghana, including the following:

- Agricultural Development Bank (ADB):
 - Encourages young people to go into agriculture, Savannah Development Program. Also has an integrated financing scheme for small holder farmers set to be scaled up by 2011
 - Integrated Financing scheme with smallholder farmers – currently pilot plan to scale by end of next year (December 2011)
- Ministry of Food and Agriculture (MOFA):
 - Cashew Project - Facilitate repayment of loans and practice farming in sustainable manner
- Ministry of Land and Natural Resources (MLNR):
 - Has a Program supported by German government for Ghana to “exploit” resources in sustainable manner. Also is developing a National Afforestation Program: 55,000 Hectors of plantation Afforested and 55,000 young adults have been employed
- Ghana’s Microfinance Network (GHAMFIN):
 - Trees for Life Program – Teak plantations; where it is seen that teak is a sustainable alternative to cutting forests. However, Dr. Alhassan (2010) notes that these types of trees have actually been a cause of soil degradation.

4.4 Feasibility Study: Is it feasible for REDD-plus funding to abate deforestation due to agricultural expansion?

This is a very basic, mini study to see how feasible it is for REDD-plus funds to provide smallholder farmers a monetary incentive that would eliminate their unsustainable farming practices. Here, we used cocoa farming to demonstrate feasibility because cocoa is one of the main drivers for the deforestation from agricultural expansion and many farmers are engaged in this type of farming due to its high profit margins. Therefore, we are estimating how much revenue is generated by an average cocoa farmer in the Western region. In order to determine the minimum amount of money REDD-plus (or any other carbon offset funding) will need to compensate each cocoa farmer to affect behavior, we begin by estimating the average revenue of a cocoa farmer in the Western Region. To conduct this first step of calculations the following assumptions made are:

- Average Land Size in Western region is 5 ha (IFPRI, 2007).
- Average cocoa production is 274kg/ha;
- Ghana Cocoa Board (COCOBOD) price for cocoa is \$1000/ton (Vigneri, 2007).

Based upon these assumptions, an average cocoa farmer produces 1,370 kilograms (kgs), and this is equivalent to roughly 1.5 tons of cocoa. Therefore, during the harvesting season an average cocoa farmer's expected revenue is US\$1,500. Owing to the cheap access to labor from family members; government subsidized input factors like fertilizers; and intercropping, the production cost per farmer is relatively low.¹²

Since the concept of carbon trading is a relatively new market and given capitalistic nature of markets, the price of carbon is highly variable. In the United States, the Chicago Climate Exchange (CCX) was trading carbon for US\$0.05 per metric ton (December 2010) (CCX, 2010). In the European Union's Emissions Trading Scheme (ETS), carbon was trading between US\$18 – US\$20 per metric ton (February 2010) (Carbon Positive, 2010a). In Africa, the World Bank recently purchased carbon credits from one of Africa's first successful CDM projects—known as the Humbo Assisted Natural Regeneration Project, and Ethiopian forestry project—for US\$4 per metric ton (October 2010) (CarbonPositive, 2010b). We used US\$4 per metric ton for our estimations because it seemed appropriate given the recent purchase of carbon credits in an African nation. Therefore, for the next set of estimations we assume the following:

- Carbon price per metric ton is \$4 (CarbonPositive, 2010b).
- High estimate of carbon released from deforestation is 150 (metric ton per ha);
- Carbon to CO₂ conversion factor: 3.67 (Butler, 2006).

Given these assumptions, a farmer stands to earn around US\$11,000 – more than seven times his earnings to not deforest; however there are other factors that we must consider. The land tenure law and stumpage fee system in Ghana ensures that revenue from felling trees is divided in certain proportions. Assuming this same system for carbon funds, the stool (landlord) receives 20 percent of carbon revenue, or in this case US\$2,202.

Since there are some discrepancies on whether the stools actually distribute revenues from stumpage

¹² We were unable to attain estimations of total costs to a cocoa farmer per harvest season, and therefore, it is important that these estimations are not accounting for these costs.

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fees to the individual land user, we optimistically assume that the stool gives the farmer 20 percent of carbon revenue, which is equivalent to US\$440.40 per harvesting season. However, this estimation assumes that a farmer has forest cover over all 5 ha of land, and we know that this is not realistic. Therefore given the current distribution for stumpage revenues, a cocoa farmer would be paid US\$110.10 to reforest 1 ha of land (this can be done through tree plantations or converting to shade-grown cocoa¹³), where expected revenue per ha is US\$300. Although this may not seem like a large gap between these two numbers, it is important to note two things: 1) the difference between these two numbers is around US\$200 per hectare; for a smallholder in Ghana, this is a considerable amount; 2) this estimation does not include the costs inputs/labor, nor does it include the cost of converting one ha of land to either a tree plantation or traditional shade-grown cocoa system.

¹³ However, converting to shade-grown cocoa would have high starter costs to the farmer that are not included here.

Chapter 5: Conclusions

5.1 “Bridging the gap”

The gaps discussed throughout this paper, whether it is an institutional gap in providing substantial services or need for clearly defined laws and regulations for banks roles or property rights, these need to be addressed in order for Ghana to continue its pursuit in initiating REDD-plus projects.

As discussed throughout the previous chapters, there are a number of institutional gaps between the rural financial system and reaching smallholder farmers. Although there has been considerable progress, laws and regulations inhibit institutions, in particular Apex Bank and RCBs, from performing the necessary duties of providing adequate financial services to farmers. There needs to be a clear definition on the role that Apex Bank has over RCBs, and if it continues to be the main supervisory body over these rural banks then the BoG and GoG need to provide the financial resources for it to properly perform such duties. However, since RCBs and Apex Bank provide the main source of financial services to farmers, RCBs and Apex bank could play an instrumental role in distributing REDD-plus funds, once the initiative goes into effect.

An alternative to Apex Bank and the RCBs, facilitating the distribution of REDD-plus funds, is the Agricultural Development Bank (ADB). Currently, this institution is more stable compared to RCBs and Apex, which is partly due to the access of financial resources from the BoG and Ministry of Finance as well as regulatory reform in 2004 – making the ADB more commercialized. In addition to being more sustainable, government officials are currently meeting with key staff at the ADB to discuss the possibility of the bank to provide REDD-plus funding to the farmers (Alhassan, 2010). The only challenge that is foreseen with the ADB being the institution to provide REDD-plus funds to farmers is the geographic location of these communities in relation to the ADB (located in Accra). Currently, road infrastructure is quite poor in Ghana, where little money has gone into maintenance for roads since its independence in 1957. Anecdotal evidence of this was described by Alhassan (2010); where in the North production of rice and maize was abundant, however most farmers were unable to transport their produce to the markets due to very poor or non-existent road structures.

Given these two possibilities for banks distributing REDD-plus funds to the farmers, it might be effective to have both the RCBs and Apex Bank work with the ADB; where ADB has the sustainability and the RCBs have the access to rural communities (although not all, more than any other formal financial institution).

Aside from the discussion of who would distribute REDD-plus funds to farmers, there still looms land tenure and benefit sharing issues. On the bright side, the Forestry Commission is aware of potential conflicts between leaser and farmers and the importance of addressing possible land tenure rights' issues even before the concept of benefit sharing could be discussed. Another important potential issues that coincides with land rights, is the length of the lease. According for Dr. Ofori (2010), if leases for the land are longer than the norm of 2 years (around 10 years), then farmers would invest more in the land, which could be a factor of behavioral change needed to abate deforestation in Ghana.

Ghana is on the right track in identifying where potential issues may be in order to REDD-plus implementation to work efficiently and effectively. However, there is a lot of work to be done, especially with the tenure rights issues since this system overlaps both customary and conventional law—where customary law changes among regions (and in some cases communities) and conventional law is not clearly representing the individuals that are most affected, the land users.

5.2 Recommendations

5.2.1 Develop Information Sharing Process

For WWF to become involved in supporting rural agriculture in Ghana, through REDD or any other future climate funds, it would be essential to stay up to date with the latest information from key stakeholders and funds involved rural finance and agriculture, and the climate regime in Ghana. Therefore, it is our foremost recommendation that the WWF help develop a regular stream of communication and information sharing to all key players involved trying to have the climate regime help rural farmers. Developing a constant source of communication with key stakeholders will help WWF stay up to date on the latest opportunities and prospects for actions in Ghana. This, in turn, will help create opportunity for WWF to form collaborative efforts with other actors and allow key stakeholders to pool resources to foster efficiency and effectiveness in future projects.

5.2.2 Ensuring Collaboration and Support

Beyond this central recommendation, other specific recommendations include:

- Work closely with NCRC, Forest Trends and Katoomba Group. These three key players are leading the way in research for carbon market potential in Ghana and are, among many activities, set to release a report in January 2011 detailing the feasibility of climate funds reaching rural farmers.
- Work closely with the Forestry Commission and the MLNR on revamping land tenure issues and benefit sharing structures to allow future climate funds going to rural agriculture to benefit farmers.
- Support initiatives that scale-up rural financial institution's capacity to reach rural farmers. For example, helping institutions build financial literacy for borrowers, depositors and bankers.
- Support efforts to incorporate monitoring systems, transparency, and a "dispute mechanism" in the R-PP "readiness plan."
- Support efforts of the Forestry Commission, MLNR, and NCRC to receive climate funds for ongoing projects from the Bio Carbon Fund, the Africa Development Bank, and USAID.
- Do not wait on REDD funding to begin any initiatives in helping small farmer gain access to rural finance. Many other funds may become available, including FCPF funds not specifically REDD-targeted, and for full implementation of REDD in Ghana will not be implemented by 2013 as predicted.

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