

Community-Based Forestry Management at the Crossroads: Timber
Plantation Development within Ghana's Jimira Forest Reserve

By

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ABSTRACT

COMMUNITY-BASED FORESTRY MANAGEMENT AT THE CROSSROADS: TIMBER PLANTATION DEVELOPMENT WITHIN GHANA'S JIMIRA FOREST RESERVE

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Over the past twenty years community-based forestry management (CBFM) has become a well-established practice in Ghana. The move away from state-based centralized forestry management follows wider trends within West Africa and the rest of the world to politically and economically liberalize forestry management to include lower-level actors (e.g. communities, individuals, businesses, NGOs, local governments, etc...). Proponents of CBFM argue that policies and programs that incorporate community-based participation and decision making within forestry management helps to foster equitable and sustainable forestry management. Critics, however, argue that CBFM leads to inequitable and unsustainable results due to the unsophisticated creation and implementation of CBFM policies and projects, the reluctance of states to cede control over management, and the power of elites to capture resources (e.g. land, labor, forest-related products).

This dissertation contributes to the literature on CBFM by investigating a new and innovative program aimed at positioning farmers as the primary beneficiaries of plantation-based timber production within degraded portions of Ghana's forest reserves. Based on ten months of research in and around Ghana's Jimira Forest Reserve I argue that the transition away from centralized forestry management can produce an enabling space to foster equitable and sustainable forestry management. This opportunity, however, becomes significantly

constrained when community-based programs get coopted by business-based programs that supposedly achieve the same goals.

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KEY TO ABBREVIATIONS

ADRA	Adventist Development and Relief Organization
CBFM	Community-Based Forestry Management
CCFI	Collaborative Community Forestry Initiative
CF	Community Forestry
CFC	Community Forestry Committee
CFM	Collaborative Forest Management
CFM	Joint Forest Management
COC	Code of Conduct
DA	District Assembly
DFO	District Forest Office
ERP	Economic Recovery Program
EXRP	Export Rehabilitation Program
EXRTAP	Export Rehabilitation Technical Assistance Program
FC	Forestry Commission
FORIG	Forestry Research Institute of Ghana

HIPC	Highly Indebted Poor Countries
IMF	International Monetary Fund
KNUST	Kwame Nkrumah University of Science and Technology
MTS	Modified Taungya System
NFPDP	National Forest Plantation Development Program
NGO	Non-Governmental Organization
NRM	Natural Resource Management
PD	Plantation Department
REDD	Reducing Emissions from Deforestation and Degradation
RMSC	Resource Management Support Centre
RUDEYA	Rural Development and Youth Association
SAP	Structural Adjustment Program
SRA	Social Responsibility
TIMO	Timber Investment Management Organization
TUC	Timber Utilization Contract
USAID	United States Agency International Development
WB	World Bank

Chapter 1: Introduction

Imagine the following:

It's March 2004, and the rainy season is about to begin. Kwame is starting his second year of farming within the forest. The forest is the Jimira Reserve. This year, the Ghanaian Forestry Commission (FC) has provided the community with more free land to continue practicing taungya, so he will start farming a second plot. This second allocation, adjacent to his first, is in a part of the reserve that has become degraded over the years. Even so, the abundant

The practice of taungya involves forestry departments' management of state-controlled forest reserves via the provision of land to farmers for them to farm and maintain both crops and trees. Under the taungya system, the crops and trees are intermixed, with trees often spaced in adjacent square-based grid patterns to provide optimal growth. Farmers leave the land once the shade from tree growth inhibits crop production, typically after one to three years.

vegetation (relative to that found in off-reserve land) has produced very fertile soil. Now that he will be farming a second plot in the reserve, he plans to let the off-reserve land he has been farming for years lay fallow longer to allow its soil fertility to increase as well. Fertile soil provides big harvests. Last year, he had a bumper crop of cocoyams and plantains. This year, he plans to stick to plantain on both of his plots. He will take some home to eat and sell the rest. Market women have started coming into the reserve from as far away as Kumasi to buy "big bunches" of plantains. Selling directly to them will save time and effort. If all goes well, he may make enough money to add another room onto his house.

The chief rang the "gong gong" bell last Friday to assemble a village meeting to discuss land preparation on the reserve. The community allocation needs to be cleared, burned, and

divided among interested farmers. Last year, the men cleared and set fire to the land while the women cooked for them. After dividing the land into individual plots, foresters from the Forestry Commission came to train the community in proper tree spacing and planting techniques. This year, the community has decided once again to prepare the land collectively, with women cooking for the men. The foresters will be dropping off the trees to plant in two weeks, so the farmers have decided to meet in a week to prepare the land. There has, however, been talk about whether or not to space trees as the farmers had been trained. The farmers have chosen to plant trees on their own. Kwame has decided to plant his trees several steps from one another. He is not very interested in the survival of the trees he plants. After all, it's the government that benefits. Even so, he knows trees need to be planted for the community to receive more land next year. He will make sure enough trees survive to make a good showing.

Fast-forward four years to March 2008. Kwame has been practicing taungya for five years. He is currently farming three plots within the reserve. There is too much shade from the trees he planted on his first two plots, so he has abandoned them. Fortunately, he has been able to acquire more land every year. There have, however, been big changes in the way taungya has been carried out in the past few years. The community no longer receives land from the government. Instead, it comes from timber operators. Since 2005, timber operators (also known as private investors) have received land within the Jimira Reserve from the Forestry Commission to establish plantations in degraded parts of the reserve. Three timber operators working near the community have appointed Kofi as a "middle-man" to help establish their

plantations. The operators are not from the community. Kofi, however, *is* from the community. He recruits farmers who are interested in practicing taungya.

Kwame is not very happy with how Kofi has managed taungya. Kofi is getting paid to plant trees by the timber operators, but he is not doing it. Farmers have to get their own seedlings instead of getting them from Kofi. Kofi then threatens to cut peoples' crops down if they are "underperforming." He charges farmers for land they used to receive for free from the government. Some farmers have even been refused plots. Kofi and the people he has recruited to help him with plantation development end up with the biggest plots. Kwame knows a lot of people are not happy, but what are they to do? It's the timber operators' land. Some conflict has emerged. Just yesterday, Kwame talked with someone who said Kofi once again threatened to cut her crops down if she did not start doing a better job planting trees. She has decided to stop planting trees. She has had enough. She's even thinking about returning to her original plot from six years ago and cutting down the trees to farm there.

Kwame preferred the old days, but it's not like there still aren't benefits. While the land is no longer free, Kofi doesn't charge a lot. Kwame can clear and prepare his own land and get seedlings by collecting them from further within the reserve. He has, however, heard from some women that the cost of hiring people with a chainsaw to clear their land is too expensive. They preferred it when the men in the community prepared the land. He also talked to Kwaku, a neighbor who was refused a piece of land from Kofi. Kwaku doesn't know what he is going to do because he does not have family land. He too is thinking about going back to his previous plots to farm. Many people, including Kwame, are not happy with the fact that the timber operators are not held accountable. They acquire large tracts of land, fell and send standing

timber to their mills, and leave their “plantation management” to Kofi. The landscape is left open for grasses to take over. Kwame has heard that timber operators are now working on the other side of the reserve. He knows that side is nowhere near degraded. Kwame recently read in the newspaper that private-based investment in on-reserve plantations was good for the country. “Good for whom?” he wondered.

Plantation Development within Ghana’s Jimira Forest Reserve

Historically, reserves in Ghana have been exclusively controlled and managed by the state through the forestry department (now the forestry services division of the Forestry Commission). Beginning in the early 2000s, with the implementation of the modified taungya program, the state joined forces with forest fringe communities around the Jimira Forest Reserve to establish timber-based plantations within degraded areas of the reserve as a way to improve livelihoods and increase forest cover. This shift in management arrangements follows wider trends in Ghana, Africa, and many other countries in the South to transfer the benefits and responsibilities of forestry management to lower level actors as a way to foster equitable and sustainable forestry management. The shift also dovetails with Ghana’s poverty alleviation strategy and environmental restoration efforts.

When I started researching modified taungya within the Jimira Forest Reserve, my aim was to explore whether or not the program was expanding livelihood strategies for farmers, improving livelihoods, and increasing forest cover through “innovative” incentives, as one forestry official put it to me, aimed at getting farmers to invest in timber production. As will be detailed in Chapter 4, several community-based incentive structures have been introduced in

Ghana to foster equitable and sustainable forestry management. These efforts have, however, been met with little success. According to Kojo Amanor (2003), a major contributing factor to such failures is the fact that the management of trees, and the benefits that flow from their management, continues to be conceptually and in practice disembodied from the interests and needs of the people who work the land and the trees that grow on it (Chapters 3 and 4 will highlight the historical and contemporary disenfranchisement of rural producers within the production of timber).

In addition to keeping a keen eye on previously failed attempts to foster equitable and sustainable forestry management effectively through community-based forestry management (CBFM), my investigation into the potential for modified taungya to turn things around would also need to keep the past failures of taungya in perspective. Indeed, taungya had been practiced in Ghana between the 1930s and the 1980s, but it was unsuccessful in improving forest cover due to the fact that farmers had no rights to benefits accruing from planted trees and no decision-making role in any aspect of forestry management (taungya, including its practice in Ghana, will be covered in more detail in Ch. 3). As a result, farmers tended to neglect the planting and maintaining of tree crops in order to “abuse the system” (e.g. deliberately killing planted seedlings to extend tenure over land, clearing more land for plantation development than needed for available seedlings, and illegally farming other areas in forest reserves, whether degraded or not) (Agyeman, et al. 2003). With the modified taungya program, however, these issues are being addressed through the restructuring of incentives to include farmers within the benefits of planting trees. In short, farmers will now have a reason to invest their efforts within the planting and maintaining of timber-based trees.

Under the old system of taungya, the state owned the trees that were established, with landholding chiefs receiving a portion of the revenue-based benefits from the sale of timber (land and tree tenure in Ghana will be covered in Ch. 3). Farmers were only entitled to benefit from the food crops they produced. Within the modified taungya program, farmers are considered the “owners” of forest plantation products with the Forestry Commission, landowners and forest fringe communities becoming shareholders of the benefits derived from the future sale of timber (see table 1 for a breakdown of benefit flows between taungya and modified taungya). In exchange for the benefits provided through this arrangement, farmers carry out the labor, such as planting and maintaining trees. The Forestry Commission contributes technical expertise, for example, training farmers in proper tree spacing. Landholding chiefs, under traditional authority, contribute the land. Forest fringe communities provide support services in the form of protection of the investment from fire and encroachment. Further details of the overall framework of the policies and regulations guiding modified taungya, including the distribution of benefits and responsibilities through benefit-sharing and land-use agreements, will be provided in Chapter 5.

Comparison of benefit sharing frameworks under the old taungya system and modified taungya system (percentage share of benefits)

Stakeholder	Old taungya system	Modified taungya system
Public agencies		
Forestry Commission	60	40
District Assembly	20	0
Administrator of tribal lands	4	0
Subtotal	84	40
Local community groups		
Tribal landowners	9	8
Traditional authority	7	7
Forest-adjacent community	0	5
Farmers	0	40
Subtotal	16	60
Total	100	100

TABLE 1: COMPARISON OF BENEFIT SHARING FRAMEWORKS (AGYEMAN, ET AL. 2003).

The “elaborate institutional framework” of modified taungya is a part of Ghana’s overall poverty alleviation and environmental stability strategies (Ibid). However, Benjaminsen and Lund (2001) highlight how shifting control of land and resources away from the state and devolving control to local people to address environmental and economic problems by “putting institutions right” tends to lead to policies that are simple and unsophisticated and badly adapted to local circumstances (Toulmin and Quan 2000, cited by Benjaminsen and Lund). The main problem with this approach is that it evades the issue of bundles of rights between forest users as well as the overlapping land and resource use which characterize most African tenure systems (Benjaminsen and Lund 2001). With modified taungya, however, benefit-sharing and land-use agreements aim to address such issues. In fact, no other CBFM program in Ghana has

gone so far in providing mechanisms to secure the interests of farmers. On top of this, forest reserves in the south of Ghana represent a particular tenure system where the state enclosed land while modifying preexisting tenure arrangements in the process (land and tree tenure is covered in Ch. 3). One could argue that opening the Jimira Reserve to include community involvement presents an opportunity to build governance and tenure relations from the ground up because forest users have only recently started working the landscape again. Then again, forestry management does not operate within a vacuum.

Based on my previous experience with community-based forestry management as a Peace Corps Volunteer and the training I had received in graduate school, both of which will be discussed in the following section, I had serious doubts about the prospects of improving livelihoods and forest cover through modified taungya. First of all, even though the program incorporates bundled rights and addresses issues of overlapping land use, the mechanisms that are being put in place may not adequately fit within the complex social, economic, and political dynamics that have shaped forestry management over the decades. For example, *if* the incentive structure that is being implemented through modified taungya does lead to farmer buy-in, what are the prospects of farmers *actually* benefitting from the trees they plant and maintain considering the redirection of benefit flow by elites? As mentioned above, farmers have historically been disenfranchised from the production of timber.

While it was impossible to know how the benefits from the trees that got planted would be distributed several decades in the future, an exploration into how stakeholders were responding to the proposed benefits at the onset of the program would provide insight into the prospects of farmers being able to benefit in practice. In addition, an ethnographic study of

how plantation development was unfolding on the ground would provide an in-depth analysis into the *process* of developing plantations. The potential benefits that could come from incorporating farmers into the production of timber is no trivial matter. Indeed, increasing global demand for forest products could create unprecedented economic opportunities for forest-fringe communities (German, et al. 2010). In Ghana, demand for timber is far outstripping supply. Yet, is there enough of an incentive for farmers to plant and maintain timber-based tree species considering they can take anywhere between 25 and 100 years to mature? As German, et al. (Ibid) point out, academics and practitioners have perhaps over-theorized a positive linkage between devolving powers and sustainable natural resource management based on an assumed causal link between increased local ownership and control over forests and an incentive to invest in sustained returns. This relationship, they maintain, has been inadequately scrutinized. How were farmers responding to the opportunity to benefit from the trees they plant and maintain considering the length of time required to realize such benefits?

With the dismal track record of community-based forestry management to bring about equitable and sustainable forestry management in West Africa (more details will be provided below) modified taungya is another attempt to turn things around. If the process does not go as intended, this “innovative” restructured approach in promoting taungya might continue to reinforce the idea that the CBFM, as well as taungya, in this case, faces too many challenges to be an effective approach in fostering equitable and sustainable forestry management. Were the policies and procedures of modified taungya shaping forestry management in such a way as to provide an incentive for farmers to invest in the program and plant and maintain trees, while

simultaneously fostering the *ability* of farmers to benefit from such buy in? In exploring the dynamics of plantation development in practice within the Jimira Forest Reserve (the methodology and methods of my approach will be covered in Ch. 2), I would learn that the institutional framework of the modified taungya program did not determine management outcomes as much as it provided a conduit for forest users to negotiate access, control, and use of forest resources; echoing Benjaminsen and Lund's concern that unsophisticated approaches to "put institutions right" run the risk of failing to deliver equitable and sustainable natural resource management outcomes. More surprisingly, I would also learn that a private-based plantation development program working within the reserve would further complicate the dynamics shaping taungya-based plantation development within the Jimira Reserve. In fact, this private-based program totally supplanted modified taungya.

Private-based plantation development, which will be covered in more detail in Ch. 6, is similar to modified taungya in terms of its institutional structure and goals. A major difference, however, is an emphasis on providing incentives to private investors to invest capital to foster plantation development rather than providing incentives to farmers to invest their labor in establishing plantations. In addition, benefits to rural producers would take the form of employment opportunities to work for private investors. Within the Jimira Reserve, private-based plantation development was implemented on a much larger scale when compared to modified taungya. This was due, in part, to the fact that private investment is seen as a more efficient means for establishing plantations. As one forestry personnel administrator higher up in the forestry commission would tell me, there is a better chance to address degraded areas of forest reserve through private-based plantation development because more trees can be

planted in a quicker time frame through capital investments. In contrast, relying on the labor of “poor farmers” produces a limited capacity to reforest degraded portions of forest reserve.

A couple of weeks into my research on “modified taungya,” I learned that private investors were recruiting farmers to establish plantations for these investors through taungya-based practices. A contributing factor to this relatively late discovery was the fact that farmers kept referring to their “taungya” farms when I asked them about their farming activities. Little did I know, when I began my research, that modified taungya was no longer being practiced. While there may have been policy and procedural shifts in plantation development from above (e.g., from the FC headquarters in the capital city of Accra), from the perspective of farmers the practice of taungya did not cease with the advent of a new program. However, while the practice of taungya continued unabated, my exploration into the dynamics underpinning the transition from modified taungya to private investment highlighted a significant shift in access, control, and use of forest resources among forest users. In relation to modified taungya, there were significant constraints for improving livelihoods and increasing forest cover through the private investment program.

This study contributes to the literature on community and collaborative-based forestry management in West Africa by providing an ethnographic account of changing patterns of access, control, and use of forest resources within the Jimira Forest Reserve, and the impacts on livelihoods and forest cover as forestry management was devolved to lower level actors. In addition to analyzing the transition from state-based to community-based forestry management through modified taungya, my fortuitous stumbling upon a private investment program and the fact that farmers still practiced taungya provided a unique opportunity to

investigate community-based and private-based forestry management “at the crossroads.” I argue that the transition away from centralized forestry management can produce an *enabling* space to foster equitable and sustainable forestry management. This opportunity, however, becomes significantly constrained once private-based initiatives are brought into the mix.

Political and Economic Liberalization: Devolving Forestry Management in West Africa

Throughout the world, including Ghana, the involvement of local communities and the private sector within forest management is now considered an important principle of tropical forestry policy and international forestry aid programs (Appiah 2001). This follows worldwide trends to liberalize political and economic institutions by democratizing decision-making and promoting market-based principles at all levels of governance and the economy (international, national, regional, community). Liberalism is achieved, in ideal form, through multi-party elections and free markets (Igoe 2004). In practice, this ideal is being integrated within existing political and economic institutional arrangements that have particular histories of their own. Thus, liberalism is reflected to varying degrees depending on the context. Dictatorships and command economies, both of which are based on central control, represent the other end of the continuum.

The shift from centralized to liberalized forms of forestry management has produced multifarious arrangements. Thus, some noted definitions are in order. The term devolution, in casting the net far and wide, is generally conceptualized as including a diverse set of actors in forest management (Sikor and Ngoc Thanh 2007). Decentralization is the transfer of powers

from central government to lower levels in a political-administrative and territorial hierarchy (Agrawal and Ribot 1999). Deconcentration, also known as administrative decentralization, refers to a transfer to lower-level central government authorities, or to other local authorities who are upwardly accountable to the central government (Ribot 2002). Collaborative forest management (CFM) refers to working partnerships between communities, forest authorities, and corporations/businesses (Carter and Gronow 2005). Community forestry (CF) is a general term referring to various models of community management of forest resources (Capistrano 2010). Community forestry has been referred to through other various terms as well, including social forestry, rural development forestry, joint forest management (JFM), shared forest management, co-management, participatory forest management, and community-based forestry management (CBFM). All of the terms listed above tend to have a specific meaning for particular projects and programs, but all of them are interventions based to some degree on local people's knowledge and wishes that are "legitimized and strengthened by government recognition" (Ingles et al. 1999, cited by Carter and Gronow 2005).

All of the forms of management arrangements provided above are made up of many different combinations of actors and relations (communities, individuals, businesses, NGOs, local governments, etc.),¹ tenure arrangements (communal, private, public),² and scales (household, community, local, regional, national, global).³ Various goals include: increasing

¹ Carter and Granow

2005 Recent Experience in Collaborative Forest Management. J. Gronow, ed. Jakarta, Indonesia: Center for International Forestry Research.

² Sunderlin, William D, Jeffrey Hatcher, and Megan Liddle

2008 From Exclusion to Ownership? Challenges and Opportunities in Advancing Forest Tenure Reform. Washington, D.C.: Rights and Resources Initiative.

³ Watts, John, and Carol Pierce Colfer

efficiency⁴, improving livelihoods⁵, fostering sustainable management,⁶ and empowerment and social justice.⁷ Recurrently discussed are issues like lack of decision-making powers,⁸ resource capture,⁹ lack of tenure rights,¹⁰ deforestation and degradation,¹¹ and reluctance to decentralize.¹²

Viewed “from above” (i.e. through the lenses of the programs being implemented) I would define modified taungya as a community forestry program and the private investment program as a collaborative forestry management program. While there are different stakeholders within the modified taungya program, management is largely directed at the community level with

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- 2010 The Governance of Tropical Forested Landscapes. *In Collaborative Governance of Tropical Landscapes*. C. Pierce Colfer and J.-L. Pfund, eds. Washington, DC: Earthscan.
- ⁴ German, Laura, et al.
2010 Forest Governance and Decentralization in Africa: Linking Local, Regional and Global Dialogues. *In Governing Africa's Forests in a Globalized World*. L. German, A. Karsenty, and A.-M. Tiana, eds. Sterling, VA: Earthscan.
- ⁵ Jagger, Pamela
2010 Forest Sector Reforms, Livelihoods and Sustainability in Western Uganda. *In Governing Africa's Forests in a Globalized World*. L. German, A. Karsenty, and A.-m. Tiana, eds. Sterling, VA: Earthscan
- ⁶ Ibid.
- ⁷ Carter and Granow
2005 Recent Experience in Collaborative Forest Management. J. Gronow, ed. Jakarta, Indonesia: Center for International Forestry Research.
- ⁸ Ribot, Jesse
2002 Democratic Decentralization of Natural Resources: Institutionalizing Popular Participation. Washington, D.C.: World Resources Institute.
- ⁹ Zulu, Leo Charles
2008 Community Forest Management in Southern Malawi: Solution or Part of the Problem? *Society and Natural Resources* 21(8):687-703.
- ¹⁰ Larson, Anne M, Deborah Barry, and Ganga Dahal
2010 Tenure Change in the Global South. *In Forests for People: Community Rights and Forest Tenure Reform*. A. Larson, D. Barry, G. Dahal, and C. Pierce Colfer, eds. Washington, D.C.: Earthscan.
- ¹¹ Humphreys, David
2006 Logjam: Deforestation and the Crisis of Global Governance. Sterling, VA: Earthscan.
- ¹² Larson, Anne M, and Jesse C Ribot
2004 Democratic Decentralization through a Natural Resource Lens: An Introduction. *The European Journal of Development Research* 16(1):1-25.

farmers becoming the direct beneficiaries of plantation development as the “owners” of forest plantation products (Agyeman, et al. 2003). The private investment program, like modified taungya, has various levels of stakeholder involvement. Yet, there is no decision making at the community level. Rather, management decisions are largely made by private investors with forest-fringe communities indirectly benefitting through employment opportunities. In practice, or “from below,” the social, economic, and political landscape of plantation development within the Jimira Reserve has no clear boundaries.

Within the subsections below I explore some of the challenges of fostering equitable and sustainable forestry management via liberalized forestry management. In particular, I highlight the difficulties faced through the reluctance of governments to cede control of forestry management, elite resource capture, and lack of community buy-in. By comparing and contrasting these examples with my research results, my objective and hope is to garner a deeper insight into the opportunities and constraints facing equitable and sustainable forestry management. Before turning to these examples, however, I will provide a short background into my interest and understanding of forestry management in West Africa.

I first became interested in community-based forestry management as a Peace Corps Volunteer serving in the Upper East Region of Ghana from 1998 to 2000. As a forestry volunteer, I was the manager of a tree nursery within the Collaborative Community Forestry Initiative (CCFI). The CCFI ran from 1990 – 2000 and was funded through the United States Agency for International Development (USAID) and overseen by the NGO Adventist Development and Relief Agency (ADRA). The project provided “woody” and “fruit” trees to participating farmers who were expected to establish small-scale, multi-use agroforestry plots

on their farmland as a way to generate food crops, fuel wood, poles for construction, fodder for animals, fruit, and income from cash crops. The overall goals of the CCFI were to enrich soil fertility and to prevent erosion; to expand livelihood strategies and improve child nutrition; and to alleviate pressure on existing wood sources. Based on the socio-economic classification system, this program fell within the intermediate category of agroforestry: the land's products were to both meet local household needs and to provide income to the farmers from the sale of grafted mangoes and cashews.

As the “manager” of the Zebilla CCFI tree nursery, my role was to “guide” four workers by providing them instruction on forestry and business management practices. I also oversaw efforts by the nursery staff to extend the project's work by helping farmers to establish their plots. In reality, I was a young man fresh out of college who knew nothing about forestry or business management. My “qualifications” consisted of having worked on a shade tree farm in northern Michigan as a hired hand for three years. Despite my lack of training and preparation, it was nonetheless apparent to me that the program was not working. Every year, at the beginning of the rainy season, the nursery workers would load seedlings they had sown within the nursery into trucks to take to farmers for planting. Few, if any, got planted.

In addition to farmers not planting trees, it became obvious that the longevity of the tree nursery, and the stipends the workers received, were in jeopardy. The nursery was to be a self-sustaining business by the time I left, but the program was coming to an end, and it still showed no sign of financial independence. The money the nursery received from ADRA for the seedlings provided to participating farmers would end with the program. The future of the nursery

hinged on people coming to the nursery to buy trees, including those who had participated within the program. Very few people came.

Shortly after returning from the Peace Corps, I read *The Road to Hell* (Maren 1997), written by a former Peace Corps Volunteer who later worked for USAID. Maren argues that the international aid industry is a big business that is more oriented toward making money than helping the poor. His book led me to see myself, in retrospect, as an active and complicit (even if unaware), participant in processes that, at best, were not helping poor Ghanaians to improve their economic situations. At the time, I was only beginning to grasp the larger forces at work, still less their long-term implications. A fuller understanding of the mechanisms and processes shaping development efforts to foster equitable and sustainable forestry management would come in graduate school.

Reading research conducted by Kojo Amanor, one of the foremost anthropologists studying land-use issues in West Africa, in graduate school significantly shaped my understanding of forestry management in West Africa. In terms of political and economic liberalization, he identifies two key phases in the evolution of forestry governance and management practices. The origins of participatory forest management in West Africa, according to Amanor (2003), stemmed from the Sahelian droughts of the 1970s in which colonial desertification narratives were resurrected to underscore the need to implement tree planting projects (the power of narratives in shaping forestry management arrangements and outcomes will be covered in Chapter 3). In Mali, for example, *Bosquets Villageois* (village woodlands) reforestation projects were promoted to involve local people. In these, the *Service de Eaux et Forests* (Water and Forestry Service) created reforestation management plans while

the villages were given the responsibility for planting tree species chosen by the Water and Forestry Service (Ibid). However, since people had no say in the decision-making process and gained few, if any, benefits from the projects, they had no incentive to manage the woodlots and the projects failed (Kone 2001).

According to Amanor (2008b), the second stage of development in participatory forestry management, dating roughly from the late 1980s and 1990s, began with the adoption of structural adjustment programs (SAPs). SAP programs, further detailed in Chapter 3, provide loans to countries experiencing economic crises. Loans were given to West African and other African governments with the condition that they would divest centralized governance. Lenders pinpointed natural resource management as a key sector, with forest departments pressed to devolve management to lower administrative bodies, communities, and the private sector. In response, several West African countries introduced comprehensive forestry reforms that included a call for increased community participation. Ostensibly, these reforms aimed to increase efficiency and equity in forest management by giving rural communities greater roles in managing forests (Ibid). There were, however, other less explicit objectives pursued under SAPs “such as rolling back the state, reducing budget deficits, placing the burden of forestry management on local authorities and communities, retrenching forestry personnel, and increasing corporate control over natural resources” (Amanor 2003).

My Peace Corps experience, when combined with my training in graduate school, led to a healthy dose of skepticism regarding the prospects of the modified taungya program achieving equitable and sustainable forestry management, let alone the prospects for equity and sustainability as farmers continued practicing taungya-based activities for private investors.

In Ghana, the shift away from centralized management is underpinned through the 1994 Forestry and Wildlife Act (Covered in Chapter 4). As the followings subsections will show, the restructuring that has taken place to date largely reflects unsophisticated and ineffective policies that make it difficult to address environmental and economic problems. In addition, the subsections will highlight the role of power relations in shaping the goals and outcomes of liberalized forestry management (my conceptualization of how power relations were shaping plantation development within the Jimira Reserve will be covered in Chapter 2). This is an important focus because, while many policy makers are attuned to addressing inequitable and unsustainable forestry management arrangements, they do not adequately assess the dynamic power relations that are underpinning the failure of many forestry initiatives. Instead, more new and innovative arrangements are put together to “put institutions right.”

From Participation to Exclusion: Reluctance of Governments to Decentralize and Devolve Powers

Decentralization reforms are taking place in most developing nations, transforming the local institutional infrastructure upon which local forest management is based (Ribot 2004). Ghana’s policy on decentralization embodies an alternative framework based on downward accountability to communities who participate in setting development goals and objectives. This legislation provides for democratically elected District Assemblies and sub-district Area Councils. The Area Councils are responsible for drawing up development plans to be discussed and ratified at community meetings. For countries in the Sahel such as Mali, Burkina Faso and Senegal, a major focus of decentralized forestry management has been on decentralizing the

management of fuel wood (Amanor 2003; Ribot 1994). However, instead of providing more local control and inclusive benefits flows, the forestry departments designate the most productive fuel wood areas as national forests, excluding them from community management. Instead, licensing schemes ensure that the most important commercial resources are maintained for non-local elites while local management is reserved for more marginal forests. Thus, participation frequently transfers the costs of forest management to local communities without providing them with significant benefits (Amanor 2003).

In contrast with the focus on fuel wood in the Sahel, forest management in the high-forest zone involves timber resources that are traded on lucrative international markets (Amanor 2008b). Resisting the transfer of control of forestry management to district assemblies the government of Ghana has argued that the high forest zone cannot be decentralized since they are of national strategic importance. Local authorities simply do not have the competence to manage these forests (Amanor 2003). However, the timber poor savannah forests in northern Ghana are only of “local importance,” so they can be transferred to district assemblies. This dual approach to managing forests results in communities within the south being shut out of the benefits derived from commercial production while communities in the north take on the of burden managing resource poor areas (Ibid).

In lieu of decentralizing forestry management in the south other “reforms” have been enacted to promote local participation and the equitable sharing of benefits derived from timber production. Community Forestry Committees, for example, have been implemented to provide communities with representation within the management of forests. As a part of my fieldwork for this dissertation I conducted interviews with CFC members in the town of Koben,

a forest-fringe community bordering the Jimira Reserve. In addition to learning that the Koben CFC members held meetings among themselves, I also found out that quarterly meetings were held at the district forestry office for the different CFCs within the district to meet and strategize. As it turned out, forestry personnel would talk while committee members would listen. In addition to attending meetings, the Koben CFC members performed management duties, such as monitoring against illegal felling of trees, as well as weeding the boundary around the Jimira Reserve). In fact, forest-fringe communities are increasingly being used to provide services that forestry personnel would have done in the past due to workforce cutbacks that are in line with Structural Adjustment Plans (SAPs) (Ibid). As with the case of decentralization in the north, this amounts to the capture of community labor rather than community participation in management decision-making.

In line with established trends, the district assembly is not a part of the overall management structure of modified taungya (see table 1). Modified taungya committees that would be implemented at the community level have, however, been proposed to ensure equitable and sustainable plantation development. The committees would be headed by the Forestry Commission, but would be comprised predominately of farmers. These committees would oversee the allocation of land to farmers, monitor farmer and Forestry Commission performance, and institute sanctions and settle disputes (Agyeman, et al. 2003). If modified taungya committees ever do get implemented, based on the track record of CFCs, it is highly questionable whether farmers would experience increased control in management decisions. In fact, if these committees had been implemented within the Jimira Reserve, I would argue that farmers would have *lost control*. With structural adjustment, as the reserve was increasingly

being turned over to plantation development, the capacity of the plantation department to oversee operations was being scaled back. During the time that modified taungya was practiced within the reserve, this effectively led to farmers having a tremendous amount of control over management decisions; although within the confines of overall Forestry Commission control. With the shift to private investment, and the increased intensification of land use that went along with it, both farmers and the FC lost control relative to the private investors. This shift in control had negative impacts for both livelihoods and forest cover. Based on these findings, which are detailed in Chapter 6, more attention needs to be paid to whether or not the state has *the ability, or is losing its ability*, to maintain control of forest management. In the concluding chapter I call for a possible *increase* in state control to ensure equitable and sustainable plantation development, although not in the form of committees.

From Cooperation to Conflict: Local Elite Capture of Resources

According to Blaikie (2006), a common assumption underpinning many CBNRM initiatives is that communities can manage their natural resources efficiently, equitably, and sustainably due to a community's tight spatial boundaries of jurisdiction and responsibilities, integrated social structure, and the common interests of community members. In retrospect, the CCFI project that I was involved with as a Peace Corps Volunteer seemed to make similar, if not the same, assumptions about the communities involved with the project. Taking a more critical view toward community development, Agrawal and Gibson (1999) suggest a more nuanced, and political, approach to understanding community, including a focus on "the multiple interests and actors within communities, on how these actors influence decision-

making, and on the internal and external institutions that shape the decision-making process.”

Citation? This more nuanced view of community dynamics provides insight into why community-based initiatives often times fail due to conflictual intra-community relations.

Based upon research conducted in the town of Kerewan in The Gambia, Richard Schroeder (1999) shows how the implementation of an ill-crafted development-based agroforestry project led to women and men competing to access, control, and use resources (e.g., land, labor, income, and development assistance). Within this project, women farmed crops underneath the trees that were planted by men (men hold ownership and control over trees). With the planting of trees, men were able to capture the labor of women to water trees as the women watered the crops. The successional nature of agroforestry (i.e. the process by which growing trees eventually succeed and replace understory crops by shading out those crops’ access to sunlight) also played a role in heightening tension between women and men. As the trees grew, the interests of the women were threatened as their crops were shaded out. These examples show how intra-community differences can lead to failed projects if such dynamics are not properly accounted for within development programs.

My field research with the Koben CFC provided a window into intra-community relations. The committee, like all CFC committees in the Atwima District, was organized by the non-governmental organization (NGO) Rural Development and Youth Association (Rudeya). The committee was made up of a chair (the chief), a vice chairman (an assemblyman), a secretary, a treasurer, and an additional member (a woman). The primary representative of the committee, as well as all the committees organized, was the chief because chieftaincy remains the key institution where land matters and local consultation are concerned (Asare 2000). Once

established, these committees were provided with training and provisions, such as boots and machetes, as well as a modest stipend. From my interviews with the committee members, I would learn that joining the committee was a way to increase social standing. As one member put it, he felt like a “big man.” The positions these members attained as CFC members, however, also produced friction with the community as some of the work that the CFC members performed threatened peoples’ livelihoods. In particular, the monitoring of illegal forest activities and reporting them to the FC put the CFC members at odds with people within the community that were either performing such activities or benefitting from them. The conflict that emerged between the CFC and the community, along with other factors that will be detailed in Chapter 4, ultimately led to the disbanding of the committee.

Based on my investigation of changing community dynamics at the intersection of the transition from modified taungya to private investment, my research shows that a shared sense of community *can*, at least to a certain degree, be an important component in fostering equitable cooperation. However, it is important to identify *when* dynamics that support cohesion are apt to break down. In the case of the Nktontini community, one of several communities that took part in modified taungya within the Jimira Forest Reserve, a breakdown of cohesion was instigated by a conceptual shift away from public/communal “ownership” and control of the landscape toward private-based “ownership” and control. What followed was a community member legitimately consolidating control over access and use of the land because he worked for private investors. Diminished cooperation and increased conflict followed.

Argument and Overview of the Dissertation

This study providing an ethnographic account of changing patterns of access, control, and use of forest resources within the Jimira Forest Reserve and the impact this had on livelihoods and forest cover as forestry management was devolved to lower level actors. I argue that the transition away from centralized forestry management can produce an *enabling* space to foster equitable and sustainable forestry management. This opportunity, however, becomes significantly constrained once private-based initiatives are brought into the mix. In the Jimira Forest Reserve, for example, farmers participating within the modified taungya program were able to negotiate relatively favorable terms of access, control, and use of forest resources while cooperatively working with the FC to improve forest cover. With the transition from modified taungya to private investment, there was a major shift in access and control over forest resources -- from farmers to others, including privately appointed “middle-men” who recruited previous taungya participants to establish plantations for private investors. In response, there was increased farmer resistance and sabotage in planting trees as their labor was captured, benefit flows were diverted, and general insecurity ensued. Exacerbating problems further, private investors had taken de facto control of the landscape as the FC had a limited ability to oversee private plantation development due to the increased intensification in plantation development alongside budget and personnel cutbacks.

Chapter Organization

Chapter 2: Methodology, Research Sites, and Methods

Chapter Two orients my methodological approach to studying plantation development within the Jimira Forest Reserve. I start by describing the approach I took to conducting fieldwork, including selected research sites. I then provide my conceptualization of how forestry management is taking place within the Jimira Reserve in relation to the frameworks of the two plantation development programs being promoted within the reserve. I then go on to outline the methods I employed to study the management arrangements of plantation development in practice, the benefits that flowed from these arrangements, and the impact that the arrangements had on livelihoods and forest cover.

Chapter 3: Colonialism and Its Lasting Influence

Chapter Three outlines colonial and post-colonial state-based forestry management in Ghana. It starts by describing the benefits of using political ecology as a lens to study relationships between humans and the environment. In addition to contributing to the dissertation's overall theoretical framework, political ecology, and its keen focus on situating power relations historically, this chapter draws attention to the marginalization of forest users as Gold Coast colonial forestry management policies were enacted. This pattern, far from ending with independence, intensified as the state took control over the management of timber for "national interests." In the 1980s, the exportation of timber was increased through structural adjustment plans (SAPs) aimed at providing Ghana's ailing economy with foreign

exchange. In effect, however, it depleted the resource base upon which so many livelihoods depended. Put together, the developments shaping forestry management throughout most of the twentieth century led to forest users losing control over forest-related resources, constricted livelihood strategies, deforestation, and antagonism between people who depend upon and those who control forest-related resources.

Chapter 4: Decentralizing and Devolving Forestry Management in Ghana

Chapter Four investigates political and economic liberalization of forestry management and the promotion of sustainability of forestry management in West Africa. The origins of participatory forest management stemmed from the Sahelian droughts of the 1970s, in which colonially-based desertification narratives were used to underscore the need to implement local tree planting projects. In Mali, for example, *Bosquets Villageois* (village woodlands) reforestation projects were promoted. In these, the *Service de Eaux et Forests* (Water and Forestry Service) created reforestation management plans while the villages were given the responsibility for planting tree species chosen by the Water and Forestry Service. However, since people had no say in the decision-making process and gained few – if any – benefits from the projects, they had no incentive to manage the woodlots and the projects failed.

In Ghana, forestry emerged as a major issue in the early 1990's after it became apparent that structural adjustment programs to revitalize the Ghanaian economy through export-oriented timber sales threatened the sustainability of forest resources. Ironically, as a consequence of the deforestation brought about by structural adjustment, SAP loans that focused on strengthening local institutions for improved sustainable management were

provided to the forest sector. Farmers and communities were thus incorporated as beneficiaries within forestry management. However, efforts such as the promotion of Social Responsibility Agreements (SRAs) and Community Forestry Committees (CFCs) have largely failed as the state resists decentralization, timber operators ignore mandates, and resources continue to be captured by more powerful actors. In response, local reactions have ranged from lack of “buy-in” to resistance and sabotage.

Chapter 5: Farming the Forest

Chapter Five shows how farmers, within the transition from state-based forestry management to community-based management arrangements, were able to benefit significantly from working the landscape. Benefits occurred despite potential challenges facing the program, such as the slow roll out of benefit-sharing agreements nationwide and the need to go through the state to maintain access to “farm the forest.” With the opening up of this arena to community-based management, farmers were able to farm free fertile land. In addition, the equitable distribution of plots to all community members, when combined with cost-sharing community-based land preparation, provided an attractive incentive for farmers to incorporate taungya as a livelihood, or even a wealth accumulation strategy. Within the process of land preparation, the cost of hiring local chainsaw operators to fell trees was distributed among farmers, adding to the benefit of “farming the forest.” Upon harvest time, market women came from long distances to buy the “large bunches” of plantains produced through farming fertile land, distributing the benefits of taungya to areas beyond the reserve.

Paradoxically, while farmers participating within the modified taungya program were not even aware of government-organized benefit-sharing arrangements, they were nonetheless planting trees. Considering taungya had been practiced in the area before, they knew of the need to “plant trees for the government.” As before, future allocations of land were dependent on successfully establishing plantations. Thus, the Forestry Commission was able to control the main incentive for planting trees – access to farmland. This was not, however, a one-way process in which the Forestry Commission simply gave away land to farmers, since the community would also provide “token” incentives – food and gas money - to visiting forestry personnel to “look favorably” upon the community.

Chapter 6: Deforesting while “Reforesting”

Chapter Six illustrates how both the livelihoods of farmers and forest cover became threatened as more “efficient” methods for establishing plantations through private-based investment supplanted the practice of modified taungya within the reserve. All of the investors were timber operators or affiliated with the timber industry. Through “sound” plans to invest the necessary capital to establish efficiently large-scale plantations in “degraded” areas of reserve, the operators were able to harvest valuable timber. In the process, there was a major shift in access and control over forest resources as the operators appointed “middle-men” to recruit farmers who had previously participated via modified taungya to establish plantations. In response, resistance and sabotage emerged as the labor of farmers was captured, benefit flows were diverted, and general insecurity ensued.

Chapter 2: Methodology, Research Sites, and Methods

This chapter orients my methodological approach to studying plantation development within the Jimira Forest Reserve. I start by describing the approach I took to conducting fieldwork, including selected research sites. I then provide my conceptualization of how forestry management is taking place within the Jimira Reserve in relation to the frameworks of the two plantation development programs being promoted within the reserve. I will then outline the methods I employed to study the management arrangements of plantation development in practice, the benefits that flowed from these arrangements, and the impact that the arrangements had on livelihoods and forest cover.

Fieldwork and Research Sites

The city of Kumasi, where I lived with my wife and son, was my base of operations for the majority of my time in the field. In planning for fieldwork, I originally wanted to live in a rural context. My wife, on the other hand, was thinking much more practically. By living in Kumasi we would have access to medical care for our young son, familiar cooking provisions, and the internet to communicate with friends and family. I would later learn that Internet access was also very beneficial for my fieldwork. Bucking stereotypes of anthropological research, I would have to forgo the “real” adventure of conducting anthropological fieldwork in “the village.” I was accustomed to making such adjustments though. When I joined the Peace Corps, I wanted to be placed in a small remote village without electricity or another Peace

Corps volunteer stationed nearby. I ended up being placed in a relatively large district capital that had recently received electricity, and with another Peace Corps Volunteer living in the town. Over time, I started to appreciate the “nonreal” experience, as if such a thing exists, of flipping a switch to read at night, as well as have another Peace Corps volunteer check in on me when I was sick. Of course, when it comes to anthropological field research, living and working within local contexts is about more than “keeping it real,” a favorite expression of one of my Peace Corps friends to describe his experience of village life. Living within communities while participating in and observing everyday life provides a deeper understanding of the complex dynamics that shape behaviors and beliefs. For this reason, I lived with my research assistant in the town of Koben during the last few weeks of my fieldwork to participate in and observe everyday life within the town.

Kumasi, the second largest city in Ghana with a population of around a million people, is the capital city of the Ashanti region. The largest city, Accra, is the political capital of the country while Kumasi is widely regarded as the cultural capital. A major contributing factor to this distinction rests within the city’s historical emergence as the capital of the Ashanti Empire in the late 17th century. Interestingly enough, Kumasi has always retained the position as political capital of the Akan stool yet it has been relegated to “cultural capital” in more recent times, a vestige of the past. This shift in conception provides a glimpse into the overall breadth, depth, and persistence of colonial influence within Ghana. Colonial influence is also highlighted by the many sawmills that are dotted throughout Kumasi; many of them are now closed because of the dwindling supply of timber. As timber production became an important source of revenue for the colonial government, Kumasi became the center of the timber trade. Today,

apart from the national headquarters of the FC being located in Accra, the majority of activity of governmental and nongovernmental agencies working with the timber trade and other forestry-related activities is located in and around Kumasi.

Just as I would learn that my Peace Corps placement in a town came with unanticipated benefits, I would find out that being based in Kumasi provided me with the ability to incorporate multiple sites for data collection. In addition to going to the reserve to collect data, I would have the opportunity to extend my analysis and investigate local-global articulations by going to government forestry offices and sawmills in and around Kumasi, as well as to the Kwame Nkrumah University of Science and Technology (KNUST) to collect data (see table 2 for site descriptions). I would go to the Jimira Reserve, which is located 30km from Kumasi, three to four days a week and spend one to two days a week working in and around Kumasi. This routine, I would learn, was very taxing. In fact, it would have been undoable if I had not bought a car for transportation.

Research Site	Description	Fieldwork
District Forestry Office (Nkawie District)	The district office houses both the forest services division and plantations divisions of the FC	I went to the office to talk with and interview forestry personnel and collect material for secondary analysis (maps, reports, and memos of correspondence between forestry personnel)

TABLE 2: RESEARCH SITES IN AND AROUND KUMASI AND ACCRA.

TABLE 2 (CONT'D)

Regional Forestry Office (Ashanti Region)	The regional office oversees district offices within the region	I went to the office to interview the regional plantation manager and collect reports and memos for secondary analysis
FC National Headquarters	The headquarters oversees forest and wildlife management at the national level	I spent several days at the headquarters talking with and interviewing plantations personnel, collecting reports and memos, and photocopying material from the FC's library
Resource Management Support Centre (RMSC)	RMSC is the technical branch of the FC, providing assistance with the implementation and monitoring of forest management systems	I went to RMSC to talk with and interview forestry personnel and collect maps, reports, memos and material from the library of RMSC
Sawmills	Descriptions are not provided in order to protect anonymity	I went to 3 sawmills in and around Kumasi to conduct interviews

TABLE 2 (CONT'D)

Forestry Research Institute of Ghana (FORIG)	FORIG conducts forest and forest product research	I went to FORIG on several occasions to talk to and interview personnel and photocopy material from its library
Kwame Nkrumah University of Science and Technology (KNUST)		I went to the university to interview the former minister of lands, forestry and mines as well as photocopy material from the university library

The Communities of Koben and Nkuntin

The 30 km drive to the Jimira Forest Reserve, located in the Nkawie District of the Ashanti Region, took me west along the Kumasi/Bibiani road, and then southwest along the Toase/Asuonwunu road. Thinking back on the drive conjures up memories that reflect the diverse social, cultural, economic, and political landscapes of Ghana. Within a short 30 minute drive, I went from the urban center of Kumasi, through the peri-urban sprawl of Kumasi, through the towns of Nkawie (the capital of the Nkawie district) and Toase, finally arriving at the rural outskirts of the Jimira Forest Reserve. The Kumasi/Bibiani road was paved and had a

lot of activity lining both sides of the road throughout much of the drive. It was a rare day when I did not see a timber truck hauling timber to an awaiting mill in Kumasi. Most, if not all, of the milled lumber would end up in Europe (a reminder of the local-global connections of timber production). The road was peppered with funeral ceremonies, old colonial buildings, old and new petrol stations, roadside vendors selling cooked plantain and corn or whatever else was in season, and roadside shops, including stands selling illegal chainsaw-harvested lumber.

Turning off on the Toase/Asuonwunu road took me southwest for the final 10 minutes of my drive. This part of the trip stood in stark contrast to the drive on the Kumasi/Bibiani in many ways. The road was paved, but I would only come upon a handful of vehicles. Most often, they were taxis taking riders from the handful of towns that the road serviced to Toase. Instead of passing by many people engaged within many different activities, as I did on the Kumasi/Bibiani road, I would pass by the occasional farmer walking the roadside. A large portion of the vegetative landscape consisted of land that was being actively farmed or farmland that was in fallow. The farms bordered the road at times or they would be visible in the distance. Crops included cocoa, palm trees, and food-based staples such as plantain, cocoyam, and cassava. The land that was in fallow would sometimes have young tree growth, but a good portion of it was grassland, a reflection of the infertile farmland that concerned so many of the farmers that I met with or interviewed. Before they became stock banks for timber, reserves were valued for their role in supporting agricultural activities by fostering climatic conditions that were favorable for farming. Today, the term “forest reserve” is synonymous with timber production as farmers struggle to maintain their farm-based livelihoods.

During the early 20th century, reserve and off-reserve vegetative cover blended. After decades of policies promoting “liquidation without replacement,” many off-reserve areas have become denuded of forest cover, producing marked differences in vegetative cover. Traveling the road to the Jimira Reserve, one sees a few viewable stands of trees a few acres in size. Shortly before arriving in the town of Koben, one of the two forest-fringe communities where I conducted my local level research, I would pass through the small town of Seidi. On the outskirts of town there was a sacred grove of trees that was several acres in size. The grove displayed the thickest viewable stand of trees on my drive to the reserve. Sacred groves are areas where tree cutting is prohibited due to certain spiritual beliefs. These groves are common throughout deciduous forest areas of West Africa, such as Cote d’Ivoire, Ghana, and Nigeria. Religious conversion, the reduced power of elders who support sacred groves, and pressures to extract resources combine to undercut the viability of sacred groves in promoting conservation (Lebbie and Freudenberg 1996). There is a sacred grove in Nkuntin, one of the two towns where I conducted research, but unlike the grove in Seidi, it is much smaller and it does not display the same level of vegetative growth (figure 2 shows a photo of the grove). I inquired about the role that the grove played within the community, but nobody seemed to know very much about it. This lack of knowledge about the grove, or people’s indifference about its existence, might reflect the waning influence of locally rooted cultural mechanisms that promote conservation. Filling the void are community-based initiatives like modified taungya.

Squeezing the road that passes through town, Koben is a strip of brick buildings with houses progressively sprawling outward. Some of the buildings have shops selling household goods, for example, soap, batteries, and flashlights. Most of the houses are made of bricks and

tin roofs with a few of the houses on the outskirts of town made of mud. The town has electricity, a primary school, three churches, and several household bars, which are built alongside the homes of the barkeepers. Farming is the main livelihood activity with shopkeepers holding irregular hours as they alternate between farming and shop-keeping. The town's chief, a farmer himself, lives in a large compound on the outskirts of town. The majority of people living in town are Akan, but there are other ethnic groups represented as well. For example, I talked with and interviewed farmers who were Frafra, Wala, and Kusasi.



FIGURE 1: TOWN OF KOBEN (MYERS 2008).

Koben has one road that branches off from the Toase/Asuonwunu road. The dirt road runs north along the eastern edge of the Jimira Reserve for a few kilometers and ends in the village of Nkuntin. Nkuntin is significantly smaller than Koben and does not have electricity. In many ways, the village is an appendage of Koben. It does not have a chief. Rather, the chief of Koben is by extension the chief of Nkuntin as well. There is no public transportation in and out of Nkuntin, so people need to walk the road leading to Koben, the only road leading in and out of the village, to catch a taxi or the occasional tro-tro (a van or minibus used for public transportation) running along the Toase/Asuonwunu road. The only “store” in town is a kiosk selling lottery tickets, so people get their household supplies from shops in Koben. The only brick building in the village is a government-funded primary school. Houses are made of mud and tin roofing. Livelihoods within the community depend upon farming and nearly all the residents are Akan. There is, however, a small group “northerners” that live on the outskirts of the village. These immigrants, like a lot of people who migrate to the south of the country, sharecrop cocoa.



FIGURE 2: VILLAGE OF NKUNTIN (WITH SACRED GROVE IN THE BACKGROUND) (MYERS 2008).

The Jimira Forest Reserve

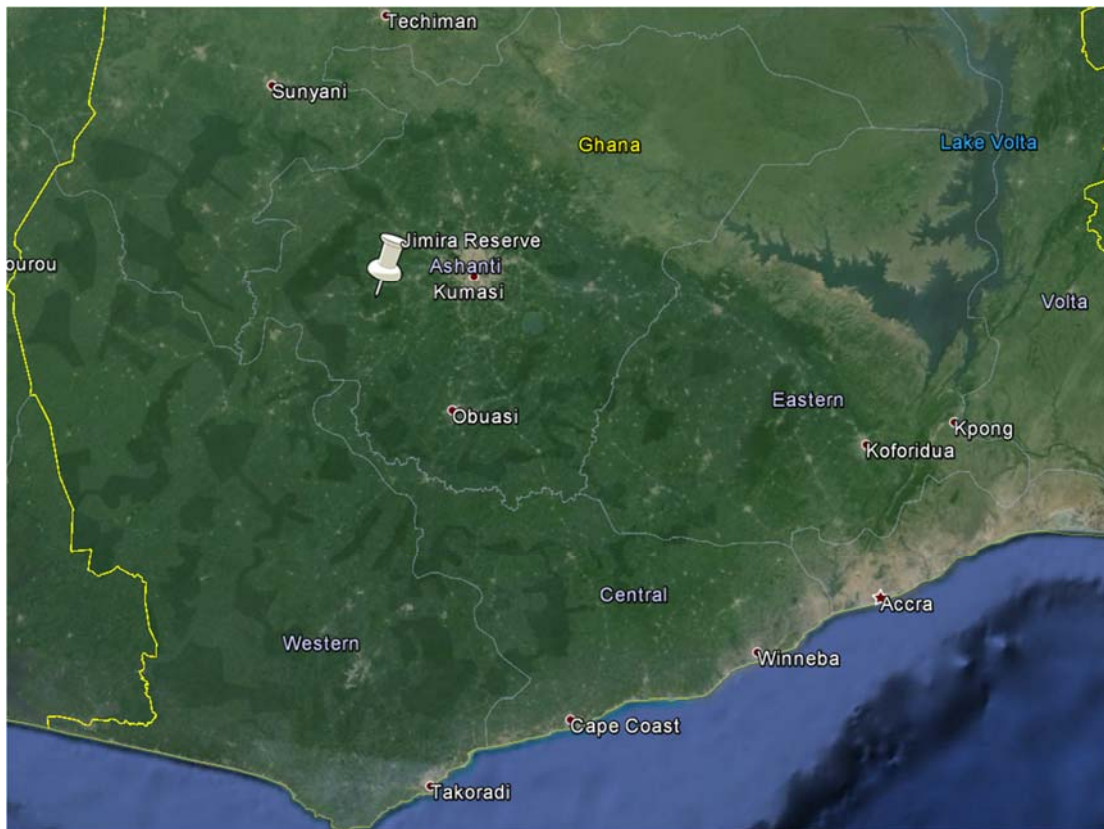


FIGURE 3: PINPOINTING JIMIRA FOREST RESERVE (GOOGLE EARTH 2013).



FIGURE 4: PHOTO OF JIMIRA FOREST RESERVE. THE TOWN IN THE CIRCLE MARKS THE NORTHERN EDGE OF THE RESERVE (MYERS 2008).

Figure 4 (above) is a photograph of the Jimira Reserve. It is one of over 100 forest reserves established in Ghana during the first half of the twentieth century (figure 3 provides a satellite image of the reserves). British colonial reservation policy of reserves was originally influenced by the desire to protect watersheds and maintain climatic and soil quality conducive to cocoa production, the main export crop of the then Gold Coast. Within decades, with increased demand for timber, the dominant concern in forestry policy turned to managing reserves for timber production with the colonial government increasingly taking an authoritarian approach to managing reserves. During the early years of reservation, forest-fringe communities were able to retain use rights of forest-related resources, like firewood,

lumber, mortars, pestles, mushrooms, game, poles, etc. With the rising importance of timber as an important component of the Gold Coast economy, communities lost their rights to exploit resources within reserves with the government enforcing enclosure policies through forest guard patrol of reserve boundaries. This patrolling has led to a tremendous amount of antagonism and conflict between communities and the FC. In recent years, conflict has increasingly revolved around chainsaw operators illegally harvesting timber within reserves to supply the rising domestic demand for lumber. Trees are cut into lumber on the spot. The lumber is then carried by hand/head to awaiting trucks.

The Jimira Forest Reserve, like all forest reserves in the south of Ghana, is classified into areas of production, protection, convalescence, and plantation development, in accordance with strategies to manage forest reserves sustainably. Production areas are earmarked for timber harvesting or are in the process of being harvested by timber companies/operators to sell lumber on the international market. Areas of protection include important hill sanctuaries and watersheds. Areas of convalescence are left to natural regeneration either because they had been harvested of timber or because they are partially degraded. Areas of plantation development are set for intervening measures to establish timber due to their highly degraded state. In the Jimira Reserve, prior to modified taungya and private investment, several forest-fringe communities had practiced taungya between the 1940s and the 1970s.

(Re)Conceptualizing Access, Control, and Use of Forest Resources within the Jimira Forest Reserve

On paper, forest management within the Jimira Reserve is largely being shaped through the policies and procedures of the two plantation development programs implemented within the reserves. Put another way, the restructuring of governance and tenure arrangements are redirecting benefit flows, management responsibilities, and land uses in prescribed ways. Yet, when I started doing field research, it became quite apparent that there was a significant difference between plantation development in theory and practice. It was also apparent that this was a very active arena. Farmers were cultivating crops and planting trees. Timber companies and chainsaw operators were felling and sending trees to market. Land was being bought and sold. Market women from near and far were coming to the reserve to buy farmers' harvests. "Middle-men" from the community were hired by timber companies to recruit farmers to establish plantations. A lot of this activity occurred "out of view," as the policies and procedures of reserve management did not account for what was taking place. It was as if a broad and opaque stroke of the brush was hiding this activity. How was there standing timber when plantation development is to take place within "degraded" areas? Why were timber operators establishing plantations? Why were farmers practicing taungya-based agroforestry for these operators? What role did "middle-men" play, and how did their activities affect community relations? Why were market women travelling long distances to buy food crops that farmers produced? The questions that derived from my initial impressions of forestry management within the reserve led me to investigate the practice of plantation development more holistically.

To better understand plantation development within the Jimira Reserve, and its impacts on livelihoods and forest cover, it became quite clear to me that I would need to investigate all the actors operating within the reserve as well as the land-use activities taking place. In addition, the role of power relations in shaping forestry management within the reserve needed to be explored within the conflictual history of managing reserves. With these considerations in mind, the broad scope of political ecology provided an ideal lens to investigate plantation development in practice. I use the theories of political ecology, which will be further detailed in Chapter 3, to investigate the political dynamics of material and discursive struggles over the environment. Among the central themes of political ecology is the role of unequal power relations in shaping a politicized environment (Bryant 1998). In other words, political ecology establishes the fact that the costs and benefits of environmental change are unequally distributed among actors.

Political ecologists explore a wide range of human-environmental relationships, including the relationship between land degradation and marginalized peoples, the relationship between environmental conflicts and larger gendered, classed, and raced struggles (and vice versa), the relationship between conservation efforts and failed attempts, and the relationship between environmental change and social movements (Robbins 2004). This study focuses on both conservation efforts and environmental conflict in an arena that appeared ripe for unrest as use of valuable resources intensified. There were two conservation-based programs here, and while plantation development is production-related, both programs were embedded within efforts to restore the nation's forest resources.

At the beginning of my field research, I wondered about the degree to which the policies and procedures of the two programs being implemented within the reserve were shaping access, control, and use of forest resources. My initial impressions suggested that they played a secondary role at most. Instead, it seemed like forest users had a tremendous amount of leeway in negotiating how forestry management would unfold in practice. Indeed, this seemed like a primary driving force guiding management within the reserve. This led me to focus on the relationship between structures and human agency in shaping social relations, outcomes, and change (Bourdieu 1977; Giddens 1979; Ortner 1984). Loosely termed “the practice approach,”¹³ anthropologists and other social scientists during the 1970s started expanding their analysis of social dynamics in response to overly deterministic explanations offered through structural analysis. Political economic viewpoints, for example, tended to focus on the external forces of capitalism to explain how societies change. Within the context of Ghana, Kojo Amanor focuses on global capitalist penetration to explain changing human-environmental relations and the outcomes for rural producers and the environment. In terms of rural producers benefiting from timber production, he highlights how, prior to capitalist penetration, farmers had a right to benefit from trees growing on their farms. With increased demand for timber, and the changes to tree tenure that has accompanied it, farmers have been systematically disenfranchised from their rights (covered in Chapter 3).

Actor-oriented approaches, in contrast to overdetermined structuralist explanations, focus on the relationship between human action and social structures to investigate the

¹³ Ortner, Sherry

1984 Theory in Anthropology since the Sixties. *Comparative Studies in Society and History* 26(1):126-166.

unfolding of social relationships. Such an approach investigates how people, acting as agents, respond to, for example, the forces of capitalism: “This approach accords a central role to showing how, despite the vicissitudes and constraints of globalization, market liberalization and state hegemonic control, the multiplicity of actors involved are still able to negotiate some critical space for themselves, and in so doing, shape the nature and outcomes of external interventions” (Long 2010). An actor-oriented approach does not negate the powerful influence of structures (Ortner 1984; Ortner 2006), nor does it reduce change to the product of detached actions by individuals or “atomized decision-makers” who make rational choices. Rather, “persons and their environments (which include other people and institutional frames) are reciprocally constituted” (Long 2001).

According to Wardell and Lund (2006) laws, regulations, and policies do not determine resource access and use as such, but erect a structure of opportunities for negotiation. Taking an actor-oriented approach in investigating plantation development within the reserve led me to focus on what people do (and the meanings their actions have for them) as my reference point for understanding the particular unfolding of events and/or for understanding the processes involved in the reproduction or change of some set of structures (Ortner 1984). Regarding benefit flows, for example, I would explore how forest users were maneuvering themselves vis-a-vis one another within the two programs being promoted in order to maximize benefits. My analysis goes along with Norman Long’s (2001) recommendation of casting the net “high and wide” by looking at “...everyday social practice and language games...larger-scale institutional frameworks, resource fields, networks of communication and support, collective ideologies, socio-political arenas of struggle, and the beliefs and cosmologies

that may shape actors' improvisations, coping behaviors, and planned social actions." In casting my own net, I set out to answer the following questions:

- 1) How were land and forest-related resources valued and used by the various actors working within the Jimira Reserve?
- 2) How were the various actors negotiating management and control of the landscape?
- 3) How did benefits flow from the management of various resources (e.g. planted trees, cleared trees, crops, labor, etc.)?
- 4) In what ways did the transition from modified taungya to private investment affect the practice of taungya?
- 5) Taken as a whole, how is forest management being practiced within the Jimira Reserve and what have been the impacts on both the livelihoods of farmers and on forest cover?

Methods

I employed several methods to study management arrangements, benefit flows, and impacts of plantation development on the livelihood of farmers and forest cover within and around the Jimira Forest Reserve. They included resource mapping, participant observation, semi-structured interviews, and the analysis of reports, memos, maps, and media clips.

Resource Mapping

The first method I employed and continued to use throughout my research was resource mapping within the eastern side of the reserve. This provided me with on-the-ground insight into the activities that were taking place, the people who undertook them, and the condition of forest cover in those areas of the reserve. Initially, I identified farmers practicing taungya as they started preparing their fields for the upcoming planting season. The list of

relevant actors I encountered expanded over time to include middlemen, timber operators, chainsaw operators and market women. I came upon new actors on my walks and started learning about past activities through informal conversation, and subsequently through interviews (covered below). The list of activities I observed ended up including farming, buying and selling of land, collecting firewood, felling of standing trees to send to market, marketing of food crops, and plantation development. Forest cover ranged from open grassland to closed canopy. Taken together, my “resource walks” and interactions provided me with a firm foundation for mapping the arena, for identifying specific actors to interview, and for developing interview questions to ask of the various actors.

My research assistant and I would walk through the reserve at least two times a week. We would typically take a different route each time, and I would take detailed notes of activity and forest cover. If we came across people working in the reserve, which occurred frequently, we would often stop to talk with them. This would typically involve talking with farmers practicing taungya because that was the predominant activity occurring on the east side of the reserve throughout my research. I would always introduce myself, my research, and obtain verbal informed consent. Conversations were open-ended, and our topics were shaped by what people wanted to talk about. When I had an opportunity to ask questions, I usually asked about my interlocutors’ observations of activity taking place within the reserve. If I were talking with a farmer, this often led him/her to discuss the changes that had taken place within taungya since they had started practicing it. These changes in governance and other matters emerged as a central theme of my research.

While the majority of my time was spent in the eastern part of the reserve, I also went to the western section to observe activity. In addition, I did off-reserve resource walks. Going to the west side of the reserve exposed me to a wider range of taungya-related activities. In particular, timber operators on the west side were actively removing tree cover to establish their plantations, whereas they had not done so on the east side for a few years. In addition, farmers in the west, both local and commuter, were receiving plots of land to practice taungya. The commuter farmers started driving their trucks on roads that had been established by the heavy equipment of timber operators. Without these roads, such access would not have been possible. Resource walks and participant observation off-reserve enabled me to compare and contrast farming activities and forest cover in different locations and to situate changes that were taking place in the reserve within wider patterns of land-use.

Participant Observation

I initially planned to observe *as well as* participate as a key data-gathering strategy, but this proved more difficult than my prior Peace Corps experience led me to anticipate. For example, when I asked farmers if I could work alongside them in their fields, they would emphatically dismiss such a crazy idea. They would say that I was not used to the heat or that I had “weak hands.” What they did not say, but always implied, was that a person of my status does not farm. I was, however, able to work with one woman on her farm for about an hour. I helped her weed between plantain, cocoyam, and the trees she had planted. People were right.

I *did* have weak hands. And weak legs. And a weak back. I was utterly exhausted after only an hour. This was the first and last time I participated in farming. Fortunately, I was able to participate in community activities within the town of Koben during the six-week period I lived with my research assistant and his family. For example, I accompanied them to church, played in local soccer games, and drank palm wine with farmers at the bar. In addition to deepening my insights into daily life in the community, my participation strengthened the rapport I had already established with community members.

Semi-Structured Interviews

Findings from semi-structured interviews make up a large portion of the data that informs this research. I interviewed farmers, forestry personnel, chiefs, timber operators, chainsaw operators, Community Forestry Committee members, market women, and middlemen. I identified farmers, forestry personnel, chiefs, and timber operators by observing which actors were participants within the Jimira Forest Reserve plantation development programs. As for individuals from other actor-categories (CFC members, market women, middlemen), I encountered them on my resource walks, during participant observation, and through interviews I'd previously conducted. For example, my interviews with farmers led me to identify "middle-men" as central actors involved in the negotiation of access, control, and use of forest-related resources. I found semi-structured interviews to be most useful because they allowed for a fruitful combination of pre-determined questions, such as how they valued

the trees they were planting in relation to food crops, with context- and event-specific questions, and questions that followed up on topics of interest to my interviewees.

Historical Interviews

I conducted a total of five historical interviews with elders in the community of Koben as a way to contextualize current activities and ecological conditions within past patterns. The ages of the participants ranged from seventy to ninety-five.¹⁴ I selected them with the help of my research assistant. Kwesi (pseudonym), my assistant, was both a farmer and the secretary of the Koben Community Forestry Committee (covered below). These interviews centered on changes interviewees had observed in farming, in the community, and in the quality and extent of forest cover in and around the forest reserve.

Gender	Ages	Ethnicities
3 males, 2 females	Between 70 and 95 years old	Akan

TABLE 3: GENDER, AGE, AND ETHNIC BREAKDOWN OF HISTORICAL INTERVIEWS.

Field Interviews with Taungya Farmers (local and commuter)

I conducted thirty-eight interviews with farmers practicing taungya on the east side of the reserve, as well as one interview with a farmer on the west side of the reserve, to

¹⁴ It is not uncommon for older people not to know their exact age. If they did not know their age, I made an approximate guess.

understand how taungya was practiced, farmers’ motivations for incorporating taungya as a livelihood strategy, the benefits they derived from it, and the difficulties they faced. With my guidance, my research assistant recruited interviewees and I interviewed them within each farmer’s taungya plot. Women, men, people of different ethnicities, young people, and old people were all represented. My questions included: why are you practicing taungya? How did you get the land? How was it prepared? What food crops are you growing and why? Is planting and maintaining trees beneficial to you? These questions pertained to all of the plots that the farmer had received over the years. I anticipated responses to vary by such demographic features as gender, ethnicity, and age, but no major patterns emerged (although there were some gender-based differences). Rather, major differences between the practice of “community”-based taungya and of taungya practiced on “timber operators’ land” emerged as a consistent theme.

Gender	Ages	Ethnicities	Towns
20 females, 18 males	36 - 85 (average age of 57)	34 Akan, 1 Frafa, 1 Wala, 1 Kusasi, 1 person did not give	21 Nkuntin, 12 Koben, 2 Seidi, 2 Nkawie, 1 Amankyea

TABLE 4: DEMOGRAPHIC BREAKDOWN OF FIELD INTERVIEWS WITH TAUNGYA FARMERS.

Interviews with Non-Taungya Farmers

I also conducted eight interviews with non-taungya farmers in Koben to gather information on peoples’ motivations for electing not to practice taungya. With this information,

I was able to compare and contrast the livelihood strategies available to both taungya and non-taungya farmers. This served as a way to gauge the degree to which taungya represents an important safety net for certain members within the community.

Gender	Ages	Ethnicities
5 females, 3 males	34 - 53	Akan

TABLE 5: GENDER, AGE, AND ETHNIC BREAKDOWN OF NON-TAUNGYA FARMER INTERVIEWS

Interviews with Forestry Personnel (district, regional, and national level)

I conducted twenty-three interviews with personnel from the Forestry Commission as a way to understand the management of the Jimira Reserve. Management practices were situated within wider socio-political frameworks, and the implementation of the laws, policies, and regulations supporting plantation development (covered below). In particular, I wanted to know about challenges commission personnel encountered in overseeing/monitoring on-reserve plantation development. I paid particular attention to the means by which implementation filtered down to the reserve in practice. While I interviewed people at the national, regional and district levels, the data that I gathered was heavily focused on district and regional levels. This was because I was only able to spend a week in Accra interviewing national level personnel within the plantations department, whereas I visited the district and regional forestry offices throughout my time in the field.

I started meeting personnel at the district level forestry office by interviewing the plantations manager of the Atwima District. My drive to and from the Jimira Reserve took me past the office, so I had many opportunities to talk with the manager and his staff. Living in Kumasi, I also had the ability to go to the regional forestry office of the Asante Region and the National Resource Management Support Center (RMSC). I did so on many of the days I did not go to the reserve. My ability to identify and gain access to various personnel snowballed as I spent time around the offices and received recommendations from interviewees about who I should talk to next. By the time I left the field, I had established substantial rapport with many people. In fact, it was due to the relationship I had built with the director of RMSC that he was willing to arrange my visit to Accra to talk with personnel at the Forestry Commission's national headquarters.

Interviews with Chiefs

I conducted two interviews with chiefs who held tenure claims to the land and tree resources within the Jimira Reserve. The first was the chief of the Koben and Nkuntin communities. The second was the chief of the Toase and Nkawie Stools of the Atwima Nwabiagya District. I wanted to get their reactions to the changes in land and tree tenure that the National Forest Plantation Development Program (NFPDP) was implementing via land lease and benefit-sharing agreements, as well as to changes within the reserve over the past several decades. In particular, I wanted to get the chiefs' feedback on the level of activity occurring in the reserve and the shifting land-use patterns that accompanied it. By following these lines of

investigation, I was able to situate the roles played by these “resource owners” within the overall changing tenure relations and land-use patterns in the reserve.

Interviews with Timber Operators

By 2008, there were several timber operators working within the Jimira Reserve to establish plantations. I interviewed all four of the operators¹⁵ who were working on the eastern side of the reserve. While I did not interview any of the operators working on the west side of the reserve, I was able to take detailed notes on their activities through resources walks and observations conducted on the west side. I interviewed three of the four east side operators by going to their mills, introducing myself, and asking if they would grant an interview. I met the fourth operator at a restaurant in Kumasi. I sought to understand the operators’ motivations for establishing plantations, the steps and inputs involved (e.g. seedlings, labor, etc.), the benefits operators derived, and the difficulties they faced. My questions included: What led you to establish a plantation within the reserve? How did you get the land? How was it prepared? How are you maintaining the plantation? How often does the Forestry Commission check on your progress? How secure are your rights to the timber you plant, and when do you expect to get a return on your investment? Triangulated with the viewpoints of other actors working in the reserve, answers to these questions helped me understand how access, control, and use of forestry-related resources was playing out in the areas where the timber operators were working.

¹⁵ One of the operators did not actually own a mill. She did, however, hold several concessions throughout the Ashanti Region.

Interviews with “Middle-Men”

I conducted five interviews with the lone middle-man working with farmers in the village of Nkuntin to situate his role within plantation development. In particular, I wanted to triangulate his views on access, control, and use of land and forest-related resources with the viewpoints of farmers practicing taungya. Farmers identified the Nkuntin middle-man to me in interviews. When asking farmers how they got their land, they would say through “Kofi” (pseudonym). Kofi lived in Nkuntin and was recruited by the three timber operators working closest to the village of Nkuntin to organize farmers to practice taungya as a way of establishing the timber operators’ plantations. In addition to meeting with Kofi on several occasions, I had the opportunity to meet with two middle-men working with a timber operator on the west side of the reserve. This meeting proved very informative for understanding how plantation development was being carried out in the west side of the reserve.

Interview with Chainsaw Operator

I conducted one interview with a chainsaw operator (who happened to be member of my research assistants’ family) to better understand chainsaw operations. Like timber operators, chainsaw operators harvest timber and send it to market. Unlike timber operators, who are sanctioned to harvest timber, chainsaw operators do so illegally. The practice is often highly organized, with capital coming from merchants in urban areas to finance operations (e.g. for chainsaws, fuel, money to get through check-points, etc.). This practice takes place both off and on reserve. On many of our resource walks, my research assistant and I would come upon trees that had been felled by timber operators. The trees are sawed into lumber on the spot,

the lumber is carried out of the reserve, loaded onto trucks, and then sent to roadside stands for sale on the domestic market. During plantation development, many chainsaw operators would come to the reserve and harvest trees that the timber operators did not find marketable.

Through my research in the east side of the reserve, I learned that chainsaw operators would also hire out their services to farmers who had bought land from Kofi and needed trees felled as they were preparing their farms. The chainsaw operator I interviewed did not work in the area, and mainly did his tree-cutting off-reserve. Still, he provided valuable information about the practice. He was very forthcoming, and even brought a chainsaw for me to look at and start up. Among other topics, we talked about his relationships with timber operators and farmers.

Interviews with Community Forestry Committee (CFC) Members

I interviewed members of the Koben Community Forestry Committee to discuss relations between the committee and the community, as well as those between the committee and the Forestry Commission. As of 2008, no formal institutional structure had been implemented at the community level for modified taungya. There had, however, been proposals from the Forestry Commission to form taungya committees to ensure intra-community representation in decision-making. The committees were also intended to provide a channel through which farmers could work more closely with the Forestry Commission.

My interviews were designed to answer questions like: To what degree do such committees represent community interests? To what degree do they foster cooperation within the community as well as with the Forestry Commission? With the help of my research

assistant, I organized two meetings with the members of the CFC. We met at the secretary of the committee's house on both occasions. All but one member was present at both meetings.

Interviews with Market Women

I conducted five interviews with market women who came to the east side of the Jimira Reserve to buy plantain from farmers. Some of the women came from as far away as Kumasi (30km). I wanted to know why they were traveling to the reserve to buy plantain instead of buying it in other places. I interviewed these women in the village of Nkuntin as they were loading bunches of plantain they had bought into the vehicles they had hired to go to and from the reserve.

Reports, Memos, Maps, and Media

Throughout my time in the field, I collected reports, memos, and newspaper clippings. Collectively, these documents supplied additional information about how plantation development was being implemented and practiced. Reports coming from the Forestry Commission provided information on the progress and limitations of on-reserve plantation development. I collected these from the district forestry office, the regional forestry office, RMSC, the Forestry Research Institute of Ghana (FORIG), and the national headquarters of the Forestry Commission of Ghana. Memos circulated within the Forestry Commission provided an inside view of forestry personnel communications, including concerns about non-degraded land that had been allocated to private investors. I gathered these from the district forestry office, the regional forestry office, and the national headquarters of the Forestry Commission of Ghana. Among other things, maps that I collected from similar sources provided information on

forest cover conditions, timber harvesting schedules, and plantation development allocations within reserves. Articles from one of the leading newspapers in Ghana, the Daily Graphic, demonstrated the discourses within which plantation development was presented to the wider population.

Chapter 3: Colonialism and its Lasting Influence

Governance and forestry management practices have deep roots in West Africa's colonial past. Under colonialism, in Africa as well as many other formerly colonized areas, the "discursive gaze" and "institutionalized practices" of colonial science and administration often went hand in hand to construct peasant land use practices as environmentally destructive, thus justifying the removal, restriction, or reeducation of peasants (Adams 2004; Beinart and McGregor 2003; Fairhead, et al. 2012; Leach and Mearns 1996). This is a history embedded within the forest reserves and wildlife parks that dot the continent (Amanor 2008a; Igwe 2004; Neumann 1998; Sunseri 2009). In West Africa, colonial administrators, with the backing of scientific authority, documented how forest cover was rapidly giving way to savanna land with desertification rapidly spreading southward as "deforestation" took its toll (Fairhead and Leach 1996; Fairhead and Leach 1998; Fairhead and Leach 2000; Leach and Fairhead 2000). The crisis narratives emanating from such scientific findings attributed deforestation to shifting cultivation and other forms of land use that colonial authorities deemed destructive thereby justifying appropriation of land, as well as coercive policies and regulations to curb such practices. However, after investigating data from colonial policy, official statistics, oral histories, and air photography, Fairhead and Leach (Ibid) found the case for regional deforestation remarkably thin. Nonetheless, it does not matter whether such narratives are empirically unfounded. As has been well established in many disciplines by a range of scholars, narratives independent of their truth value, have the power to create what will be perceived as true (See, e.g.: Igwe 2004). To this day, the need to "restore the environment" is a powerful narrative in

West Africa. Such narratives, as well as other political ecological justifications, have been used to implement forestry management interventions, such as plantation development, over the past several decades.

Political Ecology

Political ecology is a useful framework to better understand the historical and contemporary dynamics of forestry management in West Africa. Political ecology is an interdisciplinary field that bridges the natural and social sciences within the study of human-environmental interactions.¹⁶ It emerged out of ecological anthropology, the study of relationships between humans and the environment. Early works in this sub-discipline of anthropology attended to how cultures evolved and adapted in relation to ecological conditions. (See Harris 1966; Sahlins, et al. 1960; Steward 1955; Vayda and Rappaport 1968; White 1959.) This early work conceived of cultures as bounded and internally homogenous and interacting in equilibrium with the environment.

More recently, there has been a shift to focusing on such topics as policy and value orientation, scale, and method in what Conrad Kottack (1999) refers to as the “new ecological anthropology.” This subfield has moved beyond local ecosystems to include linkages and flows of people, technology, images, and information on a large scale while keeping a keen eye on the impact of differential power and status at smaller/more local scales. There is now a focus on blending theory and analysis with political awareness and policy concerns in the study of

¹⁶ It is beyond the scope of this dissertation to provide an exhaustive overview of the field of political ecology.

human-environmental relations, as opposed to the alleged “value-neutral” approaches of the past.¹⁷

Political ecology investigates the political dynamics of material and discursive struggles over the environment. Among its central themes is the role of unequal power relations in shaping a politicized environment (Bryant 1998). In other words, political ecology understands the costs and benefits of environmental change to be unequally distributed among actors. Further, it assumes that an unequal distribution of costs and benefits will strengthen or minimize existing social and economic inequalities, and that the differentiated social and economic impact of environmental change also has political implications in terms of the altered power relations between actors (Bryant and Bailey 1997). In short, human-environmental relations are political.

While the above are common assumptions held and shared by political ecologists, the field is diverse. Indeed, there is such an array of subject matter, theoretical orientations, and research methods that it does not have a distinct analytical framework or body of theories (Hellermann 2013). It also cannot be easily or singly defined. For the purposes of this project, I use the following definition: Political ecology allows us “to understand the complex relations between nature and society through a careful analysis of what one might call the forms of access and control over resources and their implications for environmental health and sustainable livelihoods” (Watts 2000, Cited by Robins 2004). While definitions vary to some

¹⁷ “Old ecological anthropology” claimed to exercise value-neutrality, in line with the positivist approach of the time period.

degree, and there is no unified analytical or theoretical framework, its central canon claims that human-environmental interactions are far from apolitical.

The Influence of Political Economy on Human-Environmental Relations

Eric Wolf is credited with coining the term political ecology. In his seminal book, *Europe and the People Without History* (1982), he illustrates how mercantile exchange and the development of capitalism and the global political economy emerged through material relations working at both the level of the “encompassing system” and the “micro-level.” With this focus on global-local articulations, such a view expands the gaze beyond isolated, bounded cultures interacting with and adapting to their physical environment within explanations of change. By focusing on intersections of the local and global, scholars have highlighted social inequality, exploitation, social differentiation, conflict, and forms of social and cultural breakdown that resulted from this integration (Paulson, et al. 2003; Peet and Watts 2004). The Jimira Reserve provides a compelling example of the global articulating with the local, and highlights the implications of such encounters. Historically, the process of reservation and the accompanying management arrangements were led by colonial powers promoting their interests. Today, the process involves new frontiers of land control with investment imperatives shaping management arrangements. In both cases, exploitation of timber, constrained livelihood options, and conflict have ensued.

Poststructuralism’s Influence on Political Ecology

Poststructuralism has had a significant theoretical impact within the humanities and social sciences. Many scholars in political ecology draw upon poststructural concerns regarding

knowledge, power, and discourse. According to Foucault, power is intricately linked with knowledge (Barnard 2000). This power enforces social order through language that is taken for granted, or “true.” Along these lines, the key to understanding the character of society, then, is to explore how certain taken-for-granted notions of the world are formed through discourse (language, stories, images, terminology, etc.) and how certain social systems and practices (medicine, prisons, schools and in this case, forestry) become universalized (Robbins 2004). Put within the context of ecology, the social and linguistic interpretation of environmental narratives focus on how these narratives become adopted as “truth” as a consequence of social processes, rather than because they reflect a pre-existing, independent biophysical reality (Forsyth 2004). In turn, poststructuralist political ecology sees the categories of reality, as they are described in much environmental science and state management literature, as ultimately arbitrary, serving specific, often narrow, political interests (Robbins 2004). In Ghana, discourse surrounding the necessity of turning “deforestation” into “reforestation” has become a central element for promoting plantation development as media accounts, governmental and NGO reports, and even reforestation plans drawn up by private investors highlight the need to combat “degradation” via plantation development. As will be shown in the next section, discourse also plays a role within conflict over environmental resources as political interests collide over ideas as to what constitutes appropriate environmental use and management (Bryant and Bailey 1997).

Environmental Conflict

One of the major developments to emerge from political ecology is what Paul Robbins (2004) refers to as “the environmental conflict thesis.”¹⁸ In short, the thesis contends that conditions of increasing scarcity, processes of resource enclosure or appropriation, and changes in conservation or resource development can create and heighten conflict between various actors/groups (state authorities, private firms, communities, class-based groups, gender-based groups, ethnicity-based groups, etc.). In line with this thesis, Raymond Bryant (1998) points out how political ecology pays particular attention to the ways in which conflict over access to environmental resources is linked to systems of political and economic control. In addition, he argues that political ecological conflicts are struggles over meaning as much as they are battles over material practices (Ibid).

For example, and in relation to rights that Ghanaian farmers have lost to benefit from timber growing on their land, farmers have taken to preemptive destruction of seedlings and removal of trees on their land to prevent crop damage that can come from felling trees. For them, trees represent potential hardship with no benefit. For the timber industry, trees represent profit. There is a tremendous amount of conflict surrounding timber as farmers

¹⁸ As Robbins describes it: “Increasing scarcities produced through resource enclosure or appropriation by state authorities, private firms, or social elites accelerate conflict between groups (gender, class, or ethnicity). Similarly, environmental problems become “socialized” when local groups (gender, class, or ethnicity) secure control of collective resources at the expense of others by leveraging management interventions by development authorities, state agents, or private firms. So too, existing and long-term conflicts within and between communities are “ecologized” by changes in conservation or resource development policy” (Robbins 2004).

destroy trees while the government and timber industry seek to prevent them from doing so through intimidation and fines.

Two major concepts that have been helpful in providing lenses to evaluate environmental conflict that have emerged from peasant studies are moral economy and everyday resistance (See, e.g. Scott 1976; Scott 1985). Moral economy posits that small-scale subsistence producers are faced with risks. To hedge against such risks, then, social systems of mutual assistance are established among peasants. With the case of the modified taungya program in the Jimira Reserve, every farmer within the community who wanted a plot to farm within the reserve received one. Another element of moral economy is the acceptance of some exploitation. Within the modified taungya program, for example, this exploitation revolved around plot sizes as well as land preparation labor arrangements. Not all kinds of exploitation are tolerated, especially arrangements that expose people to undue risk (Robbins 2004). Faced with increasingly exploitative relationships, outright resistance is often unfeasible, impossible, or unacceptably risky for many people (Bowen 1986). However, everyday resistance “ranging from slander and backtalk to work slowdowns and pilfering” can circumvent social and ideological control by more powerful actors (Scott 1985).

As mentioned above, farmers in Ghana routinely destroy timber-based saplings and cut down timber growing on their farmland. This is because they do not benefit from the revenue generated through the extraction and sale of timber. They do, however, take on the externality¹⁹ of extraction as their crops are often damaged when trees are felled and skidded

¹⁹ An externality is the cost or benefit affecting a third party who did not choose to incur such costs or benefits.

away. By destroying saplings and cutting trees, farmers are resisting the control of timber operators²⁰ and government officials.²¹ Farmer resistance was a major theme that crept up in the Jimira Reserve. In this case, however, farmers were resisting the efforts of “landowner” appointed “middlemen” who had maneuvered themselves into the position of gatekeepers. They controlled the distribution of farmable land to farmers within the reserve. In the process, middlemen sold land to farmers, thereby benefitting from farmers planting trees that the middlemen were supposed to have planted. The farmers felt exploited, but they did not openly confront the middlemen due to the risk of possibly being kicked off the land. Instead, they resisted by planting very few trees.

A Brief History of State-Based Forestry Management in Ghana

Drawing upon the historical analysis of changing power dynamics over time in political ecology, the remainder of this chapter illustrates the changing goals, policies, and practices of forestry management in Ghana over the past hundred years. In particular, it highlights the major pressures and concerns that have led to policy changes, the comparative ability of various actors to harness the benefits of these changes, and the effects on livelihoods and forest cover. By analyzing various ideological, material, and agency-based forces that have shaped forestry management over time, this chapter helps to contextualize the plantation development that is taking place within the Jimira Forest reserve. In short, it situates plantation

²⁰ Timber operators purchase concessions of land area from the government for the right to fell trees in the area to send to market.

²¹ The government receives revenue from the lease of tree concessions alongside the collection of fees for each tree felled.

development within broader social, economic, and political forces that are exerting themselves onto its landscape.

This chapter outlines four broad phases within forestry management: the consultative phase (1874 to 1939), the timberization phase (1940 to 1953), the dictate phase (1954 to early 1990s), and the collaborative phase (1994 to the present). While the following analysis generally follows these phases, there is some overlap. This chronological approach highlights the increasingly marginalized position of those who depend on direct access to forest-related resources for their livelihoods. It would, however, be inaccurate simply to portray smallholders as powerless. They, like all actors, are able to tap into various bundles of power to benefit from the constraints they face. Nonetheless, as the following pages will show, their ability to do so faces challenges on multiple fronts.

The Consultative Phase (1874 to 1939)

The period stretching from the formal introduction of colonial rule to the outbreak of World War II saw the beginnings of formal forestry, the emergence of the timber trade, the introduction and rapid expansion of cocoa production, the establishment of the Forestry Department, and the establishment of a string of forest reserves across the high forest zone (Kotey, et al. 1998). Reservation policy was in large measure influenced by the need to protect watersheds and maintain climatic and soil quality conducive to cocoa production, the main export crop. Cash crop production and efficient use of timber resources were the key concerns that led to the off-reserve policy of liquidation of the forest prior to its conversion into cocoa farms.

Before turning to the roots of formal forestry it should be noted that the colonial policy of indirect rule played a prominent role within the colonial system of governance. In particular, it led to the strengthening and formalization of traditional institutions, particularly chieftancy, which became the main vehicle of local government. This policy resulted in the colonial administration ruling through traditional chiefs who were then organized into traditional councils which had the power to maintain law and order through their own courts and by-laws. They also collected revenue and taxes, sometimes for the colonial administration. Indirect rule also strengthened the power of chiefs over matters regarding the management of land and forest resources (Kotey, et al. 1998).

The Roots of Formal Forestry

The extent and condition of forests in Ghana at different periods in the precolonial era is under debate. As James Fairhead and Melissa Leach argue (Fairhead and Leach 1998), however, there were periods of both forest increase and decrease as a result of human and environmental factors, and many forest areas considered “untouched” at the turn of the century were in fact the products of a long association with people (Brookman-Amissah 1976). Such “untouched” areas included sacred groves, burial groves, and forests left at the headwaters and along the courses of rivers and streams. Yet the nature of the management and administration of these areas were such that when the new, colonial, “scientific” forestry began, it could not discern an “old” forester or forestry tradition and practice to which it could relate.

The roots of colonial forestry in Ghana lay in the classical German-French forest management tradition modified by British colonial forestry experience in the teak forests of India and Burma and in the humid forests of south-east Asia. This was a tradition of manipulating the trees and the soil, largely to produce sustained outputs of timber. Thus, if the forester recognized indigenous protected areas at all, they were seen as fetish groves that were completely unworthy of any respectable person's attention. The new forestry therefore had no roots in, or affinity with, an indigenous tradition of forestry management when the forestry department was established in 1909.

Inclusive Control and Benefit Flows

While colonial authorities tried to nationalize forest lands to form public forest reserves in the early years, this failed due to effective use of the courts by the traditional land owners. By necessity, the process that would ultimately lead to reserved forest land emphasized the role of consultation with, and persuasion of, landholding chiefs and local communities and the rights of communities in forest reserves, including access to harvest non-timber forest products. Within the emerging timber trade, chiefs negotiated their own concession agreements with loggers, both determining and collecting royalties.

Based on research from The Forestry Department Annual Report for 1937-38, Kojo Amanor (1999) found that the bulk of the timber used in the Gold Coast was pit sawn – a method where trees are processed using hand tools “on –site” of where timber is felled. Off reserve, the division of timber taken between farmers and pit-sawyers was frequently based on the *abusa* system in which the farmer took a one-third share of the sawn boards and the pit-sawyer took a

two-thirds share. In addition, Akyem Abuakwa Stool Lands declaration of July 6, 1931 stated that “a native who fells a tree on farm or mfufua [fallow] is liable to pay to the stool one log from each tree” (Ghana National Archives, Akyem Abuakwa Land Law, ADM 11/1017).

Together, these examples show how benefits were distributed between farmers, pitsawyers, and chiefs during this time period.

Amanor argues that these types of arrangements continued to be common and were recognized as a normal part of the timber industry into the 1960s. Today, however, it is a criminal activity for farmers to sell trees to chainsaw operators. According to the law, timber trees are vested in the office of the president to manage on behalf of chiefs who are the owners of timber. According to Amanor, this is an “invented tradition” that was established and codified within the 1962 Concessions Act.

The “Timberisation” Phase (1940 to 1953)

During this period, timber outturn was the dominant concern in forestry policy. Cocoa production also continued to be a major consideration, but the focus on environmental concerns was much-reduced and non-timber forest products became progressively less emphasized. In addition, colonial government and local politicians increasingly took an authoritarian approach to forest policy. The first formal forest policy, established in 1948, instituted forestry as a technical exercise that was to be carried out without the encumbrance of having to deal with people. Elected district councils were created, which divorced the landholding chiefs from forestry and land use decisions.

Events during WWII helped to push timber considerations to the forefront of forest policy objectives as the demand for timber rose with the need to rebuild war torn Europe. In just ten years, from 1945 to 1955, lumber production went from local pit-sawing gangs to large, primarily foreign-owned milling concerns (Smith 1999). With a growing timber industry, the influence of foresters and timber merchants grew steadily while the landholding chiefs' influence on policy declined and local communities were marginalized. For example, with the increasing trend toward fortress conservation style management of reserves and the patrolling of forest reserves with forest guards, local communities were routinely denied access to collect NTFPs within reserves even though it was recognized as their right to do so. Over time these customary rights had become lost or fuzzy. In addition, it had also become difficult to reconcile customary rights for domestic use with regulation of access for commercial exploitation (Danso 1996). Thus, in both policy and practice the nation was emphasized at the expense of the locality or community (Kotey, et al. 1998).

Although forest reserves were increasingly patrolled to keep people out, this did not stop people from resisting efforts at fortress conservation as they continued collecting forest-related resources (e.g. mortars, pestles, mushrooms, medicinal plants, timber, etc.). Thus, they exercised an ability to benefit from the resources reserves had to offer even though their rights were increasingly encroached upon and constrained. In short, the ability to benefit from the resources within reserves, especially for those living within forest-fringe communities, hinged on the agency/ability of being able to walk into the reserve.

The growth of the timber industry in the post-war boom of the 1940s and 1950s coincided with a major period of cocoa expansion and rapid colonization by cocoa farmers of

new frontier areas. The Forestry Department and the timber industry were concerned about the large number of trees being felled in the opening up of forests for cocoa cultivation. The 1948 Forest Policy Act sought to win these valuable resources for the timber industry by creating a framework for salvage felling. With salvage felling, timber concessionaires were allowed to move on to newly-acquired farmland in forest frontier areas and clear the valuable timber trees before farmers were allowed to enter the land (Amanor 1999).

In addition to the 1948 Forest Policy Act, in 1959 a Protected Timber Lands Act was enacted that made it an offense for farmers to enter and settle on their own lands if they had been declared protected timber lands. This act placed restriction on farming, the cutting of trees, and settlement until the land had been logged of all valuable species by timber companies. When exploitation had ceased, these areas were de-reserved and the owners were allowed to farm (Amanor 1999; Amanor 1997). Through this legislation, more than 1,000 square miles of forest land in the forest zone were brought under protection for logging (Amankwah 1989).

According to Amanor, the legislation of the 1940s and 1950s led to a further erosion in the position of farmers in relation to land and natural resources because it prevented farmers from opening up new forest land when they pleased. This effectively established the monopoly rights of concessionaires to timber outside the reserves. With this legislation the Forestry Department hoped that salvage felling would relieve pressure on the forest reserves. Thus, they would be able to develop new management practices that would maximize timber production in the forest reserves for future exploitation once the farming frontier areas were denuded of valuable timber (Amanor 1999).

Control over the Commanding Heights

In Ghana in the late 1950s and early 1960s, “state control over the commanding heights of the economy” became the maxim (Kotey, et al. 1998). This stemmed from the post-independence ideology of Kwameh Nkrumah’s government, which saw the state as the deliverer of development. Intertwined with the belief in the efficacy of centralized planning and state control was an equally strong belief in the ability of science and technology, in this case, silviculture, to bring about “progress.” Consideration of people featured only secondarily in this process. By the 1980s, macro-economic reform and structural adjustment in the timber sector sought to inject new life into the industry, but this came with a heavy toll on forest cover and livelihoods off reserve.

1962 Concessions Act

A change in ideological conception of timber resources began to occur in the post-World War II period when the timber export industry rapidly developed to meet the needs of post-war European building reconstruction. With the development of an export-oriented timber industry, which was largely controlled by British interests, concerns about controls over concessions and property marks became important. With the passage of the 1962 Concessions Act, timber trees became vested in the state. This meant the state was to develop and regulate the timber industry on behalf of national interests by managing the timber on behalf of the traditional landowners, the chiefs.

According to Kojo Amanor (1999), while the 1962 Act codified chiefs as the rightful owners of timber, it also invented the “tradition” that all trees were customarily owned by

chiefs and farmers had no rights to exploit trees because the *abusa* system was a well-established practice prior to the 1960s. Thus, he argues that authoritative discourses constructed around customary land tenure need to be understood within the historical, political and economic contexts in which they originated and continue to exist, and within the context of colonial domination and integration into the world market, rather than in a peculiarly African cultural value system.

With the passage of the 1962 Act, the timber resources of the nation were expropriated for the narrow interest of concessionaires who were invariably political allies of the government. The interests of chiefs in this process was secured by allocating them a significant share of the royalties. While this was done under the auspices of protecting the integrity of the resource for national interests, it officially negated the rights of farmers to the trees (Amanor 1997).

Forestry: by the Forester, for the People

Rooted in colonial tradition, the post-independence Ghanaian forester saw himself as an applied scientist and forestry as an applied science buttressed by various technologies. Forestry training equipped the practitioner to manipulate the forest ecosystem to produce maximum continuing yields of certain goods and services. There was little mention of people. If people were taken into account, it was assumed that local people had no worthwhile knowledge in the area of forest management. It was also assumed that local people have no interest in conservation or forest protection and would, if not watched with vigilance, quickly liquidate the

forest. Thus, forestry practiced by the forester for the benefit of the people became the only worthwhile form of forestry (Kotey, et al. 1998).

Although forestry focused on practicing silviculture, regulating timber yields, and protecting the forests against destructive practices, there were times when communities were invited to work alongside foresters within reserves. One of the best examples was the policy of taungya. With this plantation-based practice, known as taungya, the intention is to produce a mature crop of commercial timber in a relatively short time while also addressing the shortage of farmland in communities bordering forest reserves (Agyeman, et al. 2003). Thus, both farmers and the state would benefit considering farmers had access to additional farmland while the state would benefit from an increased stock of economic tree species.

Early efforts to improve the stocking and growth of economic species, a preoccupation of the forestry department, by inducing natural regeneration and enhancing the growth of saplings within the natural forest were not met with success. Plantation development, on the other hand, provided an opportunity to produce timber more efficiently. The assumption is that plantation timber trees are more productive than the natural mixed hardwood forests. When comprised of a small number of fast-growing species planted in uniform strands at an equal rate each year, forest plantations can produce annual yields of mature wood, in periods of 10 to 35 years, rates greater than 10 times the mean annual increment of the natural forest (Foli, et al. 1997).

Unfortunately, plantation establishment entails large investments with no early returns. Thus, where resources are limited, governments are not likely to invest heavily in such

ventures. By implementing taungya, the opportunity arose to establish a tree crop at a reduced cost because farmers would clear the site, a major expenditure in plantation establishment, and also assist with tending the tree crop (Brookman-Amissah 1976). In Ghana, the taungya system was introduced in the late 1920s and was practiced through the 1980s. For the most part, Brookman-Amissah (Ibid) notes that the taungya system was an invention of the forester, to aid him in his efforts to establish a tree crop. His primary concern, therefore, was the performance of the tree crop. However, in the early days at least, the intention was also to meet farmers' demand for arable land in areas where land was scarce.

In general, the taungya system was considered unsuccessful, and large areas of forest reserve were rapidly transformed into scrubland and grassland (Amanor 1999) due to conflicting interests between food crop production and tree growing as farmers favored their production interests over the state's interest (Prah 1994). The early plots given under the system were small. Later on, efforts were intensified in response to concerns that the natural forests would not be able to meet all the country's timber requirements in the long term (Ibid). This meant more land was allocated to the taungya farmer, perhaps more than he really needed for his subsistence agriculture or could cope with.

According to Brookman-Amissah (1976), since genuine land-hunger is one of the pre-requisites for a successful taungya system, it is easy to understand the forester's difficulty in getting a farmer's best performance. Indeed, oftentimes farmers would resist tree establishment by only watering and weeding their crops, pruning trees or even cutting them down to prolong their tenure over the land, or expand their farms beyond what was originally allocated (Ibid).

Successional agroforestry is premised on the underlying agricultural crop being overtaken by trees as the system matures. What is often overlooked, according to Richard Schroeder (Schroder 1999), in its promotion is the fact that the planned succession of species may also imply a succession of property claims, with one set of interests eventually superseding all other claims. Thus, any attempt to reproduce successional agroforestry systems along these lines “remains an invitation to popular sabotage” (Bryant 1996). Kojo Amanor (1999), highlighting the taungya system in Ghana, points out an additional rub to property claims as forestry officials and workers began to sell the rights to taungya to speculators and brokers who then made profits by reselling the rights to farmers. Farmers then perceived that they had bought rights to cultivate the land, rather than entered into a contract to provide labor in exchange for land. They then ignored the tending of the trees, which they thought was the responsibility of the “taungya contractor.”

It should be noted that although taungya has been largely considered “unsuccessful,” there were socio-economic benefits. For example, there was increased employment, a reduction in young people migrating from rural areas to urban centers in search of paid jobs, movement of people from urban areas to practice taungya, and farmers were able to avoid crop depressions due to over-cropping one site or too frequent returns to fallow land (Brookman-Amissah 1976). Taungya may have been unsuccessful in afforestation/reforestation, but the benefits should not be overlooked. In the next two chapters I will argue that the heavy focus on the successful planting of trees within the modified taungya and private investment programs obscures the multiple opportunities, and constraints, for farmers embedded within these complex land-use systems. This oversight may even parallel the increasingly narrow

trajectory forestry management has taken over time, from reserves having multiple benefits to just one, the pursuit of scientific forestry, the efficiency of plantations, etc..

Neocolonial Structural Adjustment

When Ghana achieved independence in 1957 its economy was one of the healthiest in Africa. Since 1983, however, the country has embarked on an Economic Recovery Program (ERP) with substantial backing from foreign donors (Ghana Forestry Commission 2002). Some of the major factors that led to the need for recovery include post-independence neglect of the agricultural sector, several coups, the 1973 oil crisis, a rise in public spending over revenues, inflation fueled by falling domestic food production, and a shrinking market share in Cocoa (Hogg 1993). Put together, these problems led to one of the most severe packages that the International Monetary Fund (IMF) and World Bank (WB) managed to get a developing country to accept prior to 1990 (Tabatabai 1988).

Closely connected with the country's economic decline was the demise of the timber industry in the 1970s (figure 3.1 shows timber exports from 1972 to 1983). The WB cites several causes for the decline, including the artificial cedi/dollar exchange rate, the poor state of logging transportation and sawmilling equipment, deteriorating road infrastructure, and the ban on the export of logs of 14 primary species (World Bank 1988). In an effort to "get the forest industry moving again," a combination of Fund imposed devaluations and rehabilitation projects were implemented. The projects, which consisted of the Export Rehabilitation Project (ExRP) and Export Rehabilitation Technical Assistance Project (ExRTAP), were funded with

assistance from the International Development Association, a soft-loan arm of the WB (Hogg 1993; Smith 1999).

Table 4.2: Ghana: Export of wood and wood products, 1972 - 1983.

Year	Volume (m ³)	Value (US\$)
1972	1,237,463	60,101,056
1973	1,282,726	138,172,718
1974	710,031	83,549,309
1975	759,871	83,793,378
1976	698,590	97,099,624
1977	539,688	77,222,826
1978	403,466	66,907,189
1979	288,903	47,248,310
1980	188,582	43,909,299
1981	117,630	29,726,027
1982	100,303	15,295,728
1983	117,310	15,776,968

Source: Ghana Timber Export Development Board (in Friends of the Earth, 1992).

TABLE 6: GHANA'S TIMBER EXPORTS FROM 1972 TO 1983 (GHANA TIMBER EXPORT DEVELOPMENT BOARD).

Between 1983 and 1986 about \$140 million in soft loans was pumped into the forestry sector (Friends of the Earth 1992). This resulted in the rapid expansion of logging capacity and the increasing volume of exports as liberalization encouraged foreign firms to enter once again the timber sector. However, this increased logging capacity exceeded the available resource base. Exacerbating the problem was the fact that the repayment terms of loans ensured that timber companies continued to expand logging operations to meet their obligations (Amanor 1999). According to Hogg (1993), the forest industry not only began to move again, it was moving so fast that it was running out of control, and was almost completely unregulated.

With the rapid proliferation and expansion of logging capacity and the severe pressure this put on forest reserves, the Forestry Department introduced strict controls on the logging of timber in reserves. As a result, the main focus for concessions for the extraction of timber turned toward areas outside reserves (Amanor 1997). By the early 1990s, 80 percent of timber exports originated from off-reserve areas. Adding to this rise were new processing technologies that enabled poor timber species to be transformed into wood products. This resulted in large numbers of new tree species being logged, including species that were common on farmland. Many of the species were deliberately preserved by farmers for maintenance of soil fertility (Amanor 1999).

As a whole, macro-economic reform and structural adjustment eroded social services and tended to deepen rural poverty in Ghana. Reform of the timber sector sought to inject new life into the industry at a time when the resource was in a precarious situation and forest management was ill-equipped to cope. By the end of the period, the Forestry Department was under-resourced and stretched to the limit. In addition, many reserves had become badly degraded, the annual allowable cut bore little relation to estimates of sustainable yield, and some important timber species were threatened with commercial extinction.

Conclusion

In taking a political ecological approach to understanding human-environmental interactions, this chapter briefly investigated the history of forestry management in Ghana. It started by highlighting the marginalization of forest users via the enactment of Gold Coast colonial forestry management policies. This pattern, far from ending with independence, intensified as the state took control over the management of timber for “national interests.” In the 1980s, the exportation of timber was increased through structural adjustment plans (SAPs) aimed at providing Ghana’s ailing economy with foreign exchange. In effect, however, it depleted the resource base upon which so many livelihoods depended. Put together, the developments shaping forestry management throughout most of the twentieth century led to forest users losing control over forest-related resources, constricted livelihood strategies, deforestation, and antagonism between people who depend on forest-related resources and those who control forest-related resources.

Chapter 4: Decentralizing and Devolving Forestry Management in Ghana

This chapter explores equitable and sustainable forestry management as reforms are enacted to incorporate local communities within forestry management. For countries in the Sahel such as Mali, Burkina Faso and Senegal, a major focus of reform has been on decentralizing the management of fuel wood (Amanor 2003; Ribot 1994). However, instead of providing more local control and equitable benefits flows, the forestry departments designate the most productive fuel wood areas as national forests, excluding them from community management. Instead, licensing schemes ensure that the most important commercial resources are maintained for non-local elites while local management is reserved for more marginal forests. Thus, participation frequently transfers the costs of forest management to local communities without providing them with significant benefits (Amanor 2003).

In contrast with the focus on fuel wood in the Sahel, forest management in the high-forest zone involves timber resources that are traded on lucrative international markets (Amanor 2008b). Participatory forestry management arrangements in Ghana's High Forest Zone, to a great extent, have aimed at improving forest cover and livelihoods as well as securing the timber industry. A major focus in achieving these goals has been on getting farmers to "value" timber-based tree species²² growing on their farms. In the past, even though farmers were the caretakers of timber-based tree species, the farmers did not benefit from

²² One of the ways to classify different forest-related resources is to distinguish timber and non-timber forestry products, or NTFPs (e.g. fruit trees, tree nuts, mushrooms, palm oil, tree oils, etc.). While NTFPs are often commercialized, this is not necessarily the case. Even if commercialized, their exchange value is much smaller than that of timber.

production. Upon the harvesting of timber, revenue was distributed to chiefs (the rightful owners), the Forestry Commission (the manager of forests), and concession²³ holders. As discussed in Chapter 3, this distribution reflects an arrangement rooted in colonial and post-colonial conceptions and policy in which chiefs are “traditionally” considered the rightful owners of trees. Left out of the mix are the farmers who have cared for and maintained trees on the farms.

With the ratification of the 1994 Forest and Wildlife Act (detailed in appendix), participatory forestry management has become a key component in reversing the unsustainable trend of forestry management in Ghana²⁴. Social Responsibility Agreements (SRAs), which seek the inclusion of farmers to benefit economically from timber-based tree species growing on their farms, are a key mechanism within this effort (covered below). Overall, the rationale for participatory forest management has been to improve administrative efficiency, reduce administrative costs, address equity issues, and improve environmental monitoring (Amanor 2003). However, participatory forestry management has been difficult to implement.

²³ Concessions are large areas of land where people or businesses, mainly timber companies, have the right to exploit timber resources. This right is granted by the state and concession holders pay a fee to the state to receive such rights.

²⁴ Other reforms to bring about sustainable forestry management via the 1994 Act include building inventory systems for monitoring of forest resources, streamlining systems for allocating timber concessions to promote transparency, and developing better revenue collection as a way to rationalization of the industry (Amanor 2003).

Decentralization and the Banning of Chainsaw Operations

Ghana's policy on decentralization embodies an alternative framework based on downward accountability to communities who participate in setting development goals and objectives. This legislation provides for democratically elected District Assemblies and sub-district Area Councils. The Area Councils are responsible for drawing up development plans for discussion and ratification at community meetings. However, this process exists on paper only since various government agencies, including the forestry service, have resisted decentralization (Amanor 2003). Interestingly enough, in Ghana's savanna zones the forest department has devolved management, but retained it for the high forest zone (Ibid).

While decentralization has been resisted in Ghana's high forest zone, existing decentralized arrangements have been recentralized in other cases. Prior to the Timber Resource Management Regulations of 1998, decentralized District Assemblies issued permits and licenses to chainsaw operators to harvest a limited selection of timber trees off-reserve. Chainsaws were introduced in Ghana in the 1960s, replacing the practice of pitsawing timber into lumber, with operations becoming widespread by the early 1980s as production carried out by timber operators decreased along with the nationwide economic decline. As chainsaw milling increased in the commercial sector, it was recognized as an important socio-economic activity with the government aiming to regulate it. This led to the Trees and Timber Regulation Act of 1991 which allowed District Assemblies (DAs), in collaboration with District Forestry Offices (DFOs), to issue permits for the felling and milling of trees (Marfo 2010). However, the decentralization of regulating operations led to the indiscriminate felling of trees, abuse of

permits by both DAs and operators, and a lack of cooperation between the DA and the DFO (Adam, et al. 2007; Kotey, et al. 1998). The resulting depletion of forest resources and increasing environmental degradation became a concern, prompting policy interventions (Marfo 2010).

The Timber Resource Management Regulations of 1998 bans all chainsaw milling for commercial purposes. However, despite heavy crackdown by timber task forces the activity continues to thrive and provides jobs that support the livelihoods of many people. The principal driver of this growth has been the demand for domestic timber. In turn, it has been difficult to enforce the ban considering the demand for jobs for youth, corruption among forestry officials the police and the joint FSD-military task force, political interferences in FSD operations, the lack of political will to enforce the ban and implement alternatives, and strong support for chainsaw milling by local communities (Ibid). Regarding this last point, chainsaw operators are often times preferred by farmers to loggers since there is little extraction disturbance and, not having a legal right to the trees, the farmers are in a much better position to arrange compensation or some other payment because they can demand or confiscate some of the lumber (Kotey, et al. 1998; Mayers and Kotey 1996).

Not surprisingly, a tremendous amount of tension, confrontation, and conflict has arisen from chainsaw operations and has resulted in physical assault and death in some cases. Chainsaw milling takes place in concession areas of licensed companies, depriving those companies of timber stock for their operations (Adam, et al. 2007). In addition, enforcement of the ban has had a significant impact on official monitoring of resources because there is a huge cost to the enforcement agencies in terms of both time and money while also exposing

enforcement personnel to potential violence when confronting illegal operators. Conflicts can also arise between operators and farmers. The two most common points of tension involve the lack of consultation with farmers before logging, and lack of compensation for crop damages (Marfo 2010).

Indeed, tension and conflict between chainsaw operators and communities does exist. It is, however, minimal since communities and farmers are likely to benefit more from chainsaw milling operations than from conventional logging (Adam, et al. 2007; Marfo, et al. 2006). Based upon interviews with farmers and chainsaw operators, Nutakor and Marfo (2009) found that in most cases there was positive interaction between the two parties. In about 74% of their cases, farmers reported that they knew the operators who felled trees on their farms. They also found that more than 90% of the operators claimed to consult with farmers before removing trees while 80% of farmers said they were informed. Furthermore, farmers also indicated that about 44% of the operators lived and operated within their own communities (Ibid).

Perhaps most surprisingly, according to Nutakor and Marfo (2009), 77% of farmer-operator conflicts were reported to have been resolved. According to farmers' claims, 47% of the cases were peacefully resolved, while in about 30% of the cases force and mediated bargaining had to be used. In instances where some engagement and bargaining was involved, 59% of farmers reported that the promised amount was paid. Such reports, combined with incidences where there was no conflict, support the idea that there are significant ties between farmer and chainsaw operators, even when misunderstandings arise. These ties, according to Nutakor and Marfo (Ibid) underscore the support of chainsaw milling at the community level.

Community-Based Participatory Management

According to Agrawal and Gibson (1999), development communities are often conceptualized as small geo-spatial units, homogenous in social structure, in which residents share norms. In retrospect, the CCFI project that I was involved with as a Peace Corps Volunteer seemed to make similar, if not the same, assumptions about the communities that were taking part within the project. Taking a critical view toward community development, Agrawal and Gibson suggest a more nuanced, and political, approach to understanding community, including a focus on “the multiple interests and actors within communities, on how these actors influence decision-making, and on the internal and external institutions that shape the decision-making process” (Ibid).

Research conducted by Richard Schroeder in the town of Kerewan in The Gambia (see Ch. 1) has taken a critical perspective on the make-up of communities and fleshed out competing claims between community men and women in terms of access, control, and use of resources (e.g. land, labor, income, and development assistance). Women controlled understory crops. Men controlled the trees. With the planting of trees, men were able to claim control over the labor of women to water trees as they watered their crops. The successional nature of agroforestry, that is, the process by which growing trees eventually “succeed” and replace understory crops by shading out the crops’ access to sunlight, also played a role. As the trees grew, the interests of the women were threatened as their crops were shaded out. Put together, the dynamics highlighted above led to divisions between men and women over the control of resources.

Chapter 6 will show how private investors working within the Jimira Reserve were able to benefit from the capture of farmers' labor as farmers planted both their crops as well as the trees of private investors. The successional nature of agroforestry also played a role in benefiting the interests of private investors as trees would shade out crop production and squeeze farmers off the land. These processes, when combined with private investors appointing "middle-men" from the community to recruit farmers to establish plantations for the investors led to divisions within the community over the control of resources. The following sections will show how the promotion of SRAs and Community Forestry Committees (CFCs) have led to similar divisions within communities where these initiatives have been implemented.

Social Responsibility Agreements (SRAs)

The adoption of participatory forest management in Ghana was largely a response to the liquidation of farmland timber following the success of structural adjustment in getting the industry moving again. The reforms that were implemented recognized that the future of the forestry industry depended upon farmers having an incentive for preserving and planting trees (Amanor 2003). Regarding the planting of trees, a bill was passed by parliament which gave farmers rights in forest trees that they cultivate on their land (Amanor 1999), thus encouraging the establishment of plantations. As for "naturally" occurring timber, social responsibility agreements were devised as a way for communities to have an incentive to protect standing timber while benefitting in the process.

Before the enactment of the Timber Resource Management Act in 1997, and the social responsibility provisions built within it, there was no formal mechanism for the participation of local forest communities in the benefits generated by timber operations off-reserve (Ayine 2008). Under this act, before timber rights are granted to timber operators in the form of a timber utilization contract (TUC), the contractor must negotiate a social responsibility Agreement (SRA) with communities. This legislation has its roots in Ghana's 1994 Forest and Wildlife Policy (Ibid). In particular, in the rights of people to have access to natural resources for maintaining a basic standard of living and their responsibility to ensure the sustainable use of such resources. It also aims to ensure the perpetual flow of optimum benefits to all segments of society and to institutionalize decentralized and participatory decision-making processes that involve local communities in matters relating to their welfare (Ibid).

As part of the TUC contract system, SRAs are aimed at ensuring more accountable relationships between timber contractors and communities by formalizing agreements regarding community benefits. Each SRA contains two key sections: a code of conduct (COC) and a statement of social obligations. The COC describes the manner in which the timber company should operate to ensure that all timber operations are conducted with due respect for rights of the communities inside or adjacent to the harvesting area, such as respect for local customs and beliefs, local infrastructure, and local livelihoods. The COC also usually includes provisions that local people should allow the company to operate without hindrance as long as the terms of the SRA are being met (Mayers and Vermeulen 2002)

As for the statement of social obligations, the timber operator pledges contributions to community development, for example, construction of roads, schools, clinics, electricity lines,

boreholes, etc. Support might be in the form contributing to a community development fund or providing a commitment to supply materials like lumber, cement, roofing sheets, furniture, etc., for various development projects. The statement usually specifies the financial value of the contribution. The maximum cash value stipulated by laws is 5% of the total accrued stumpage fees from the TUC area (Ibid). Interestingly enough, no minimum cash value is stipulated by law.

According to Dominic Ayine (2008), while the legal framework of SRAs provides an enabling environment for the negotiation of SRAs, the actual practice of negotiating and implanting these agreements leaves much to be desired. For example, the Forestry Commission does not have the capacity to conduct regular monitoring to ensure that SRAs are diligently implanted by timber firms. Thus, many timber operators simply ignore drawing up SRAs or simply fail to honor the promises they had made within them (Ibid). And while Ayine focuses on such challenges facing the enabling legal framework of SRAs, Kojo Amanor points out how the underlying framework has inherent flaws considering it does not reflect the historical rights farmers have to both planted *and* naturally occurring trees (Amanor 1999). He points out how SRAs are a tenure compromise considering vested interests argued that forest tenure laws are enshrined within the national constitution (Amanor 2003).

Based on an interview survey conducted in three areas where SRAs were underway, Mayers et al. (2002) point out how many residents saw little positive impact from the operations of the logging companies working in their areas. In fact, a common opinion was that any profits returned to the area through agreements with the company had gone to the stool chief or elders rather than to the community. This is not surprising considering stool chiefs are the official representatives of communities and have the authority to sign the agreement with

timber contractors. These reforms, however, occur within the existing context of monopoly ownership of trees by chiefs that is vested in the state that contracts them out to loggers on behalf of its clients, the chiefs; leading to chiefs dominating the process of defining the appropriate forms that SRAs should take (Amanor 1999).

In addition to chiefs frequently dominating the SRA process, Amanor (2003) also finds SRAs unsatisfactory considering the benefits of individual efforts to preserve trees are to be redistributed to the community. And while the participatory forestry management reforms that emerged in the mid-1990s, including SRAs, grew out of environmental concerns and the need to alleviate the marginalization of farmers by giving them an interest in preserving timber, the reforms also produce new types of levers linking farmers as producers of farm-cultivated timber but receiving little if any benefits in return (Ibid). Thus, farmers have few incentives to participate within the framework of SRAs, while the ability to benefit from destroying trees or negotiating with chainsaw operators to fell them continues.

Community Forestry Committees (CFCs): The Case of the Koben Community

In addition to SRAs, Community Forestry Committees (CFCs) have also been pursued as a mechanism to achieve sustainable forestry management. These committees establish a channel for the Forestry Commission and stakeholders to communicate while also providing a conduit for encouraging widespread forest-fringe community participation within the planning, implementation, and monitoring of forest reserves (Amanor 2003; Pynnonen and McDonough 2005). Management activities include boundary maintenance, firebreak establishment,

facilitating and monitoring Social Responsibility Agreements with timber concessionaires, and policing forest reserves against illegal encroachers (Amanor 2003).

Since 1998 many CFCs have been established throughout the Brong-Ahafo, Asante and Western Regions. Each committee is composed of five members. This includes the village chief, a village administrator (such as the district assembly member), and three members chosen from groups in the community, including women's groups, youth groups, etc. These members are selected by the Forestry Service in consultation with the community (Amanor, et al. 2002). The primary representative is the chief because chieftaincy remains the key institution where land matters and local consultation are concerned (Asare 2000). Once established, these committees are provided with training and provisions, such as boots and machetes, as well as a modest stipend.

In the Atwima District, the NGO Rural Development and Youth Association (Rudeya) facilitated the creation and implementation of CFCs within the district. It was Rudeya's well-established presence within the district that ultimately led me to conduct research in and around the Jimira Reserve. In particular, it was an aid worker from Rudeya who, based upon the contacts he had made while setting up the CFC in the community, set up a meeting to introduce me to the Koben community. During this meeting, which was called by the chief and was attended by approximately 50 community members, it was decided that I would need a counterpart to show me around the community and help me with my research. As it turned out, the assistant, Mensah (pseudonym), was also the secretary of the CFC.

After having worked with Mensah for a while I learned that the community forestry committee was excited by the possibility that my arrival would bring added benefits, especially since I was accompanied by a Rudeya representative. While Rudeya had worked with the CFC and the community for several years, it had been a while since the NGO had been actively working within the community. During the time Rudeya spent working with the CFC the members received training, attended workshops, and procured provisions to aid them in carrying out their work. In addition, Rudeya facilitated the establishment of the committee. Paralleling the criteria set by the forestry department, the chief was made the chairman of the committee.

The Koben CFC was comprised of a chair (the chief), a vice chairman (an assemblyman), a secretary (Mensah), a treasurer, and an additional member (a woman). Soon after being formed, Rudeya started hosting district-wide capacity building workshops where stakeholders could collaborate on achieving the goals and objectives set out within the CFC framework. During the first meeting the CFCs received shirts, provisions such as boots, transportation reimbursement, and per diem. When asked about the format of these meetings, Mensah said that they were not very participatory considering most of the time was spent with CFC members sitting in a meeting hall listening to various forestry officials discussing their agenda and how the CFCs could help. He did, however, speak very highly of his experience. As he put it, he felt like a “big man.”

Also according to Mensah, in the beginning the members of the Koben CFC were active in holding meetings and carrying out their duties. In particular, they helped the forest guard clear the boundaries of the reserve while policing against illegal chainsaw operations. Their

involvement within forestry management was not, however, embraced by the community. In particular, their policing against chainsaw activity became a point of contention because many people benefitted from its practice, either directly or indirectly. Indeed, many people preferred buying lumber from these operators as it was significantly cheaper. Having such benefits cut off was not welcomed. Mensah's relationship between his committee duties and his membership within the community and his family was complicated. In fact, his house was built with lumber procured from his chainsaw-operating brother-in-law.

During the time that the CFC was active there were several instances when the committee would halt illegal operations taking place in the reserve. On one particular occurrence, the CFC confronted a man within the reserve --the man had recently cut a tree and was in the process of cutting it into boards -- and threatened to report him to the district forestry office. The situation resulted in a meeting between the operator, the community forestry committee, and the man who had hired the operator to procure lumber for him. The man who hired the operator to fell the tree ended up pleading with the committee to let the situation slide because the lumber was for household consumption. In the end, the operator was given a warning to not cut trees in the reserve.

On another occasion, the committee halted a chainsaw operator and reported him to the district forestry office but the issue was not pursued. According to Mensah, the lack of support they were receiving from the forestry commission when combined with the increasing amount of pressure they were getting from the community to stop policing chainsaw activity contributed to the committee halting its activities. In addition to the increasing amount of hostility and alienation the committee was receiving from the community - in fact Mensah's

chainsaw operator neighbor stopped talking to him - the committee was also becoming disillusioned with the benefits of being a CFC member once Rudeya ended support. With their departure the district meetings were no longer being organized, CFC members no longer received provisions, and the district forestry office quickly dismissed the committee as a component of forestry management.

While some scholars have stated that CFCs have proved quite successful, indeed perpetuating a need for internalization within the FC's operational area across the country (Pynnonen, et al. 2005), others have pointed out that incorporating community governance has yet to be practical due to the resistance of the government to decentralize management (Wiggins, et al. 2004). According to one forester I interviewed, from the beginning the CFC framework was not taken seriously by the FC. In fact, he said that there is major disagreement within the FC regarding the participation of communities in general. While some foresters agree with the participatory model, others contend that farmers are the cause of their problems, not the solution.

While the forester I interviewed thinks that communities would be happy to help manage reserves as long as the FC would provide benefits in the form of "petty" gifts such as work boots, machetes, hoes, etc., Kojo Amanor (2003) argues that forest-fringe communities are increasingly being exploited as a way to provide management services. Thus, the process consists of the provision of labor services rather than true participation. While communities may get some benefits, they pale in comparison to the large profits being realized by the forest industry (Amanor 2003). In addition, I would add that not all community members are set to benefit. Like with the case of SRAs, the CFC model prioritizes the chieftancy as the "traditional"

form that governance decisions should take and chiefs are always included as members within committees. In addition, in the case of the Koben CFC it was the committee members themselves who benefitted from the upward mobility that the position afforded through increased prestige, expenses paid travel, procurement of boots and machetes, for example. At the same time, access to procure cheap lumber for people within the community was threatened. In short, the benefits the community members received came at the expense of peoples' livelihood strategies.

Perhaps the most striking aspect of the Koben case was the role that community pressure played in affecting the decision-making of the committee members. This ranged from chainsaw operators getting off with a warning to the disbanding of the committee altogether. It may be the case that the moral obligations the committee members had to the community conflicted with their aspirations. Of course, there were many factors at play. The power of moral obligation should not, however, be discounted.

From Exclusion to Inclusion?

Through political and economic reforms initiated in the 1990s, farmers and communities were to be included as beneficiaries within the production of timber as a way to promote sustainable forestry management. These efforts have, however, largely failed. According to Kojo Amanor (2003), a major contributing factor to this failure is the fact that the management of trees, and the benefits that flow from their management, continues to be conceptually and in practice disembedded from the interests and needs of those who tend trees – farmers. While reforms have been enacted to “equitably” distribute the benefits of timber production,

these reforms nonetheless fail to recognize the individual claims that farmers have historically made to the benefits of timber growing on their farms. Instead, the benefits – if they are forthcoming and if timber companies comply with the new reforms – take the form of distributed community-based projects, with chiefs sometimes highjacking those benefits for their own gain.

In addition to conflating the interests of farmers with “the community,” Amanor (Ibid) argues that these reforms have paradoxically created conditions for further marginalizing farmers by shifting off-reserve forestry management into the hands of the Forestry Commission. Prior to Timber Resource Management Regulations of 1998, decentralized District Assemblies issued permits and licenses to chainsaw operators to harvest a limited selection of timber trees off-reserve. Unlike timber operators who mainly supply the global market, chainsaw operations supply the domestic market. Chainsaw operators will enter into agreements with farmers to split the benefits from felling trees on the farmers’ farmland. This practice, however, has since been criminalized by legislation that bans the use of chainsaws in processing lumber into boards. Now the military launches punitive campaigns against people who continue to produce chainsaw timber (Ibid).

In response to increased alienation, many farmers have taken to destroying trees and saplings that are growing on their farms as a way to prevent disruption to farming – their main livelihood strategy (Amanor 1999). Indeed, trees have become a major liability to farmers, considering the damage to crops that often occurs when concessionaires fell trees.²⁵ While

²⁵ Heavy equipment is often used to skid/drag trees to awaiting trucks that will take the trees to a sawmill, damaging both crops and the land in the process.

farmers may still arrange with chainsaw operators to fell trees, perhaps to preemptively rid their farms of trees in a way that secures their own ability to benefit financially, to employ this once legal strategy now carries the risk of stiff sanctions such as fines or jail time.

A major theme that emerges in Kojo Amanor's work is that farmers are denied access to the flow of benefits emerging from timber production in Ghana. In keeping with his concern for the interests and needs of farmers and keeping a keen eye on the discursive and material factors underpinning their marginalization and exploitation, I wanted to see how farmers were faring in practicing taungya within the Jimira Reserve. Unlike off-reserve forest land, about which Amanor has made his observations, many of the dynamics taking place within the Jimira Reserve are different. For example, devolving reserve management after decades of relatively closed management created an opening for forest-users to negotiate access, control, and use of resources anew; albeit not in a vacuum devoid of existing relations. To what degree were farmers' interests and needs being met within this different context, especially considering the problems that have been associated with the management of reserves, taungya, and community-based forestry management? Chapter 5 will show how the transition away from state-based forestry management provided a space for farmers practicing community-based modified taungya within Nkuntin to negotiate relatively secure access to the benefits of forestry management while potentially improving forest cover. Chapter 6 will show how the gains that farmers had made became threatened, and the implications for forest cover, as community-based plantation development within the reserve was supplanted by a private-based plantation development program that maintained the goals of alleviating poverty while reforesting degraded portions of the reserve.

Chapter 5: Farming the Forest

In July of 2005, I returned to the town where I was a Peace Corps Volunteer for a visit with friends I had made during my two-year stay. It was the first time I had been back since 2000. I was eager to see the tree nursery. Was it even still there, I wondered? If so, to what degree was it operational?

The nursery was still there. Whether one could call it “operational” is another matter. The shed was dilapidated, yet still functional. The fence around the perimeter of the nursery was there as well, even if it did have a few holes in it. There were even tree seedlings awaiting purchase by farmers. When I asked the workers how many farmers were coming to buy seedlings, they said very few. Why then, were the workers continuing to run the nursery? It clearly wasn’t solvent. The monthly wages they had received from ADRA had run dry years ago. It seemed they maintained the nursery because they were able to farm within it. The nursery, in fact, provided an excellent spot to farm considering it had a well for easy access to water and a fence to keep animals out. The problem, however, was that they did not know how much longer they could keep running the nursery. The landowner wanted his land back.

After my initial visit, I went with two of the nursery workers to see the chief to help settle this dispute between the landowner and the nursery workers. The workers asked me to remind him that the nursery was still a community project, even if ADRA no longer supported it. This was true, and I was happy to lend support. They also wanted me to tell him that ADRA would not be happy if the nursery was taken over. In addition, they argued I should tell the chief that if the nursery is taken back, ADRA would come to the community to investigate. This

was not true, and I did not tell the chief that ADRA would come. I do not know, however, if what I said was actually communicated because the workers translated for me. It seems plausible to assume that strategic mis-translations took place. Even so, to what degree does it matter that I said anything at all? I was clearly being used in an act of symbolic maneuvering. I was a part of the negotiating process. Most importantly, I was previously associated with the nursery, so I would be perceived as having sway with ADRA.

Timber-based plantation development within the Jimira Reserve is being administered through two separate programs - modified taungya (detailed below) and private investment (detailed in Ch. 6). Each program, like the CCFI project and other natural resource management (NRM) development programs, has various mechanisms in place to guide program implementation (e.g. benefit-sharing agreements, land-use agreements, reforestation plans). However, Wardell and Lund (Wardell and Lund 2006) emphasize that laws, regulations and policies do not *determine* resource access and use as such. Rather, they erect a structure of opportunities within which rights may be negotiated. There is both overlap and divergence when it comes to how the two programs are structured. At the heart of each, however, are new property arrangements.

Property

According to Sally Moore (1999), “Property is not about things, but about relationships between and among persons with regard to things. In short, to say that someone has a right to land is to summarize in one word a complex and highly conditional state of affairs that depends on the social, political, and economic context. The place, the setting, the history and the

moment, all matter.” Embedded within this focus on the centrality of relationships to any concept of property are ideas of flexibility and negotiability. These are central elements that have characterized tenure arrangements in Africa. As Sara Berry (1997) notes, people interact within and across various social boundaries in many ways. The relations that get constituted among people are not determined with written or unwritten rules as much as through multiple processes of negotiation and contest. “These processes may occur simultaneously, or in close succession, but need not be synchronized or even mutually consistent” (Ibid).

Analyzing property right arrangements is a powerful lens for investigating how access to, use of, and control over resources is organized in society (Benjaminsen and Lund 2001). Property rights are socially recognized claims to property based on law, custom, or convention (Ribot and Peluso 2003). Tenure in Africa is characterized by diverse, overlapping, and competing property relations (Juul and Lund 2002). In addition, struggles over land have to do with power and the control of people (Berry 2001). The existence of multiple tenures only add to this complexity as “terms of tenure therefore not only depend on the specific use of a given resource, but they are also contingent upon the ‘surrounding’ tenures which are themselves also recreated and transformed through peoples’ actions” (Benjaminsen and Lund 2001).

Chapter three illustrated how farmers have a right to cultivate crops on their land while the stool (i.e. chiefs) and concessionaires lay claim to the timber-based tree species standing on the land. This has led to tremendous conflict as the right to claim trees has been heavily contested and conflict ridden. Regarding how people can maneuver to secure claims, Benjaminsen and Lund (2001) point out how such processes “range from the application of rules to their assertion in terms of situational adjustment with possible reference to embryonic

rules, to myths and half-baked principles which may prove ephemeral but do the job in the moment of assertion.” When the two nursery workers took me before the chief in the town where I was a Peace Corps Volunteer, the power of my presence was ephemeral but it may also have done the trick. If not for the long term, perhaps it secured the nursery workers’ access for a little while longer.

Bundles of Power

According to Ribot and Peluso (2003), “The notion of access has not been adequately theorized.” In an effort to fine-tune theoretical conceptualizations of access, they identify property rights as only one of several ways by which people can access benefits. I draw upon their call to look at a wider range of social relationships that can constrain or enable people to benefit from resources, whether or not they have rights to them. They define access as “the ability to benefit from things – including material objects, persons, institutions, and symbols.” This ability to benefit is wrapped up in a range of powers “embodied in and exercised through various mechanisms, processes, and social relations [...] These powers constitute the material, cultural and political-economic strands within the ‘bundles’ and ‘webs’ of powers that configure resource access” (Ibid).

A focus on the “ability to benefit” proves useful within the context of the Jimira Reserve. Many of the actors who were benefitting from working within this active arena did not necessarily possess rights. They were, nonetheless, able to mobilize various “bundles of power” to access the many benefits accruing from plantation development. For example, farmers practicing modified taungya provided visiting forestry personnel with gas money and food to

“look favorably” upon them the next time allocations of land were provided. Other mechanisms, processes, and social relations that enabled and constrained the ability of actors to benefit from various resources (e.g. land, timber, labor, etc...) are highlighted throughout this chapter and chapter six.

The Practice of Taungya within the Jimira Forest Reserve

The first time I visited the Jimira Forest Reserve in March of 2008 my research assistant and I traversed a several kilometer stretch of taungya-based activity that had been taking place since the early 2000s. This walk took us from Nkuntin to the northeast edge of the reserve (figure 5 shows route taken). The most striking observation on this initial walk was the variation in tree cover considering we started in closed canopy, then traversed through a mix of scattered young trees and grassland, and finally ended at a small block of original growth (figures 6 and 7 show the variation in vegetative growth). I would later learn that a lot of this variation coincided with the two different programs being implemented within the reserve. I also found out that the private investment program was the dominant program operating within the reserve. Most surprisingly, I would learn that the practice of taungya intertwined with the private investment program even though it was not ostensibly a part of the program.

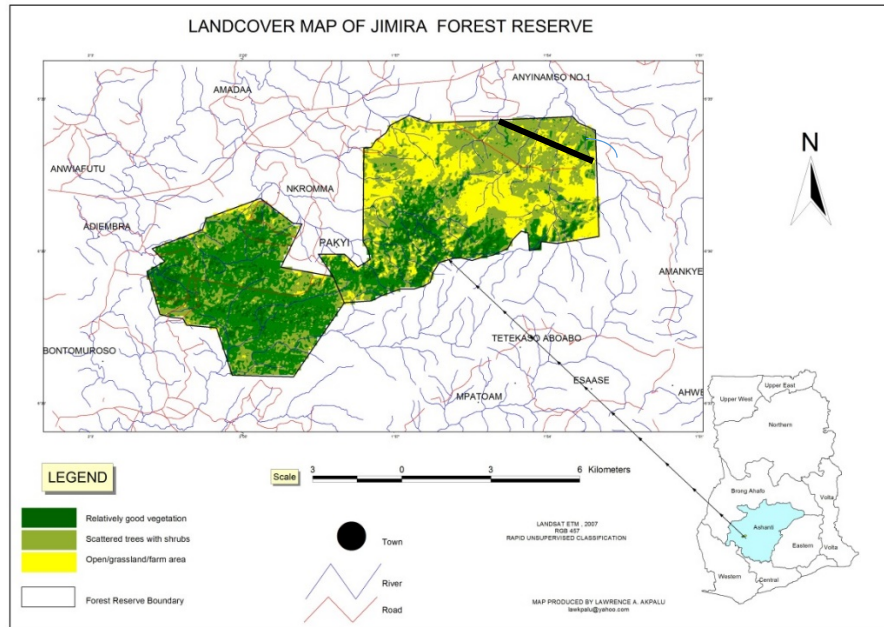


FIGURE 5: LANDCOVER MAP OF JIMIRA RESERVE (CIRCA 2007) (AKPALU 2008). THE BLACK LINE SHOWS ROUTE OF INITIAL WALK TAKEN WITHIN THE RESERVE.



FIGURE 6: CEDRELLA TREES THAT WERE PLANTED WITHIN THE NKUNTIN COMMUNITY MODIFIED TAUNGYA AREA (MYERS 2008).



FIGURE 7: TAUNGYA BEING PRACTICED WITH LITTLE TO NO TREE PLANTING. LAND IN BACKGROUND HAS NOT BEEN CONVERTED (MYERS 2008).

In 2002, the community of Nkuntin was allocated a portion of degraded land within the Jimira Reserve for farmers to practice taungya; albeit with a modification to property relations with the goal of fostering equitable and sustainable plantation development (detailed below). This area would later become the closed canopy of trees that I took note of on my walk. In addition to Nkuntin, several forest-fringe communities around the reserve took in this new way of practicing taungya. These communities would receive subsequent allocations on a yearly basis for the next few years. From the mid-2000s and the time I left the field at the end of 2008,

however, the FC did not issue any new allocations to communities. Instead, “degraded” areas within the reserve were allocated to private investors to establish plantations through a private investment program.

Like the modified taungya program, private investment is underpinned through rearranged property relations. Unlike modified taungya, farmers are not a part of the mix. The private investment program provides private investors significantly larger allocations than the ones provided to communities (see figure 8 for a comparison in allocation sizes). All of the investors working within the Jimira Forest Reserve were timber operators or were somehow affiliated with the timber industry. Most private investors instead of hiring workers to establish their plantations procured labor by recruiting farmers who were interested in continuing the practice of taungya. Clearly, there was a major shift in how plantations were being established within the reserve.

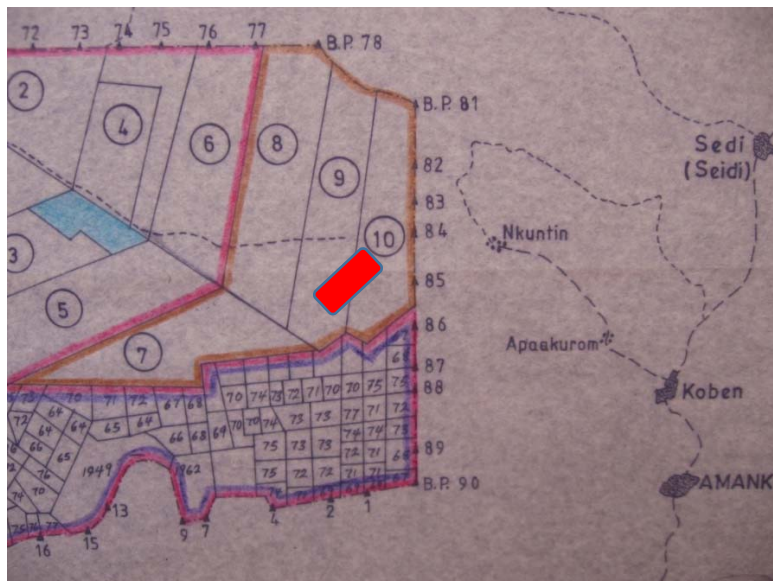


FIGURE 8: EASTERN SECTION OF JIMIRA RESERVE (GHANA FORESTRY COMMISSION). PRIVATE INVESTORS ARE ALLOCATED COMPARTMENTS (CIRCLED NUMBERS). THE RED RECTANGLE SHOWS FIRST YEAR MODIFIED TAUNGYA ALLOCATION TO THE NKUNTIN COMMUNITY (APPROXIMATE LOCATION AND SIZE).

Prior to the early 2000s, taungya had not been practiced within the reserve since the 1970s (figure 9 shows years taungya was practiced). Modified taungya was practiced between the early and mid-2000s. Since the mid-2000s, however, most of the reserve's compartments had been allocated for private plantation development (figure 10 shows compartments within reserve). Were these programs fostering sustainable forestry management? What role did taungya play within the two programs? How were livelihoods and forest cover affected within the transition to private plantation development? To what degree were these programs both similar to and different from previous attempts to achieve sustainability through inclusive forestry management? These were some of the initial questions that came to mind as I started conducting research within the reserve.

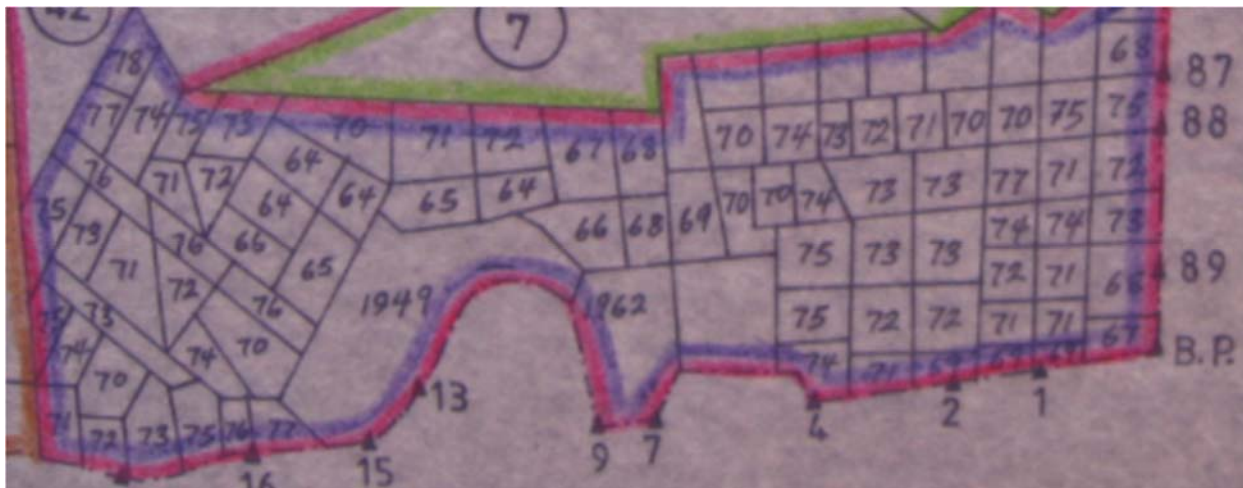


FIGURE 9: PREVIOUS TAUNGYA ACTIVITY (SOUTHEAST CORNER OF RESERVE) (GHANA FORESTRY COMMISSION).

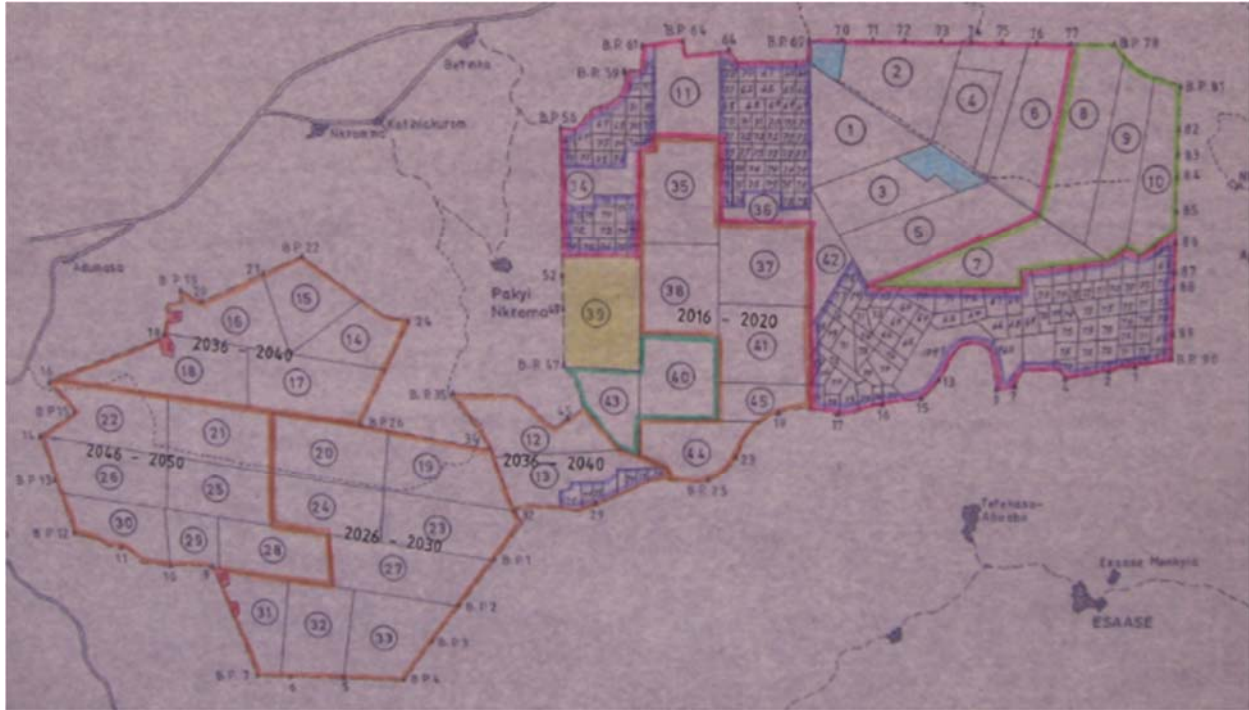


FIGURE 10: HARVESTING SCHEDULE FOR JIMIRA RESERVE (WITH DATE RANGES) (GHANA FORESTRY COMMISSION).

Over 10 months of research within the Jimira Reserve I holistically explored the social, economic, and political dynamics shaping forestry management within the Jimira Forest Reserve. Ostensibly, forestry management within the reserve was being guided through the specified stakeholder involvement, property relations, and land-use imperatives of the two programs. In practice, a different picture emerged. In fact, there was little overlap between forestry management on paper and in practice. The full scope of this difference will become apparent in the next chapter. In this current chapter I will highlight factors that increased community control of forestry management, improved benefit flows to farmers, and led to the planting of trees through the Nkuntin modified taungya project.

The Revival of Taungya

As highlighted in Chapter 4, over the past two decades tropical deforestation in Ghana has become a topic of great interest among researchers, policy makers and development practitioners (Appiah, et al. 2009). Thus, several different approaches have been pursued to alleviate, as well as potentially reverse the trend. One approach that has garnered a tremendous amount of attention in the past few years has been the establishment of plantations because of the environmental, social, and economic benefits that can be derived from them (e.g. Increased forest cover, improved access to forest-related resources, timber for export, etc...) (Carle, et al. 2002).

While there is a tremendous amount of debate regarding the degree to which plantations can deliver substantial benefits (Brockhoff, et al. 2008) the potential for plantations to deliver these benefits through “prudent planning, management, utilization, and marketing” has led many researchers, policy makers, and development practitioners to pursue plantation development as a viable option (Appiah, et al. 2009; Carle, et al. 2002). Most recently, plantation development has been seen as a great way to receive payments for off-setting carbon emission through the Reducing Emissions from Deforestation and Degradation (REDD) program considering the growing interests in providing payments to developing nations for conserving forests to mitigate global climate change (Sandker, et al. 2010; Förster, 2009; Hansen, et al. 2009).

In Ghana, the passage of the Forest Planation Development Fund Act of 2000 is aimed at creating favorable conditions for the establishment of plantations throughout the country. In

conjunction with the act, a National Forest Plantation Development Program (NFPDP) was established in 2001 to increase forest cover at a rate of 20,000 hectares per year as a part of the government's poverty reduction program. A major component of this initiative is to promote community-based forest plantation development strategies and alternative livelihood support schemes (Amoah 2009). Within the community-based approaches that have been promoted, agroforestry-based modified taungya has played a key role.

Ghana's incorporation of agroforestry-based initiatives to attain sustainable development follows worldwide trends. Agroforestry systems have been widely touted for their prodigious capacities to boost commodity production while stabilizing the underlying resource base (Schroeder 1999). Thus, agroforestry approaches have been constructed as an unambiguous and unalloyed "good," with forestry departments, environmental agencies, scholars, activists, and donors pursuing it (Rocheleau and Ross 1995; Schroeder 1995). While studies have shown empirical evidence that calls such blind faith into question (Angelsen 2004), largely because of the immense ecological, social and agricultural complexity involved, agroforestry continues to be a major pursuit within Ghana's conservation strategy.

While there are many agroforestry initiatives in Ghana that are taking place off-reserve, including partnerships between timber operators and farmers, a major focus has been on establishing plantations within degraded portions of reserve. The reason for this, as one forester put it to me, is because it is easier for the FC to secure access to plant trees on reserve because the FC has jurisdiction over the reserves (i.e. it's more efficient). This, when combined with the fact that many communities have shown a lot of interest in bringing back the taungya

system because they saw it as beneficial, has led to reintroduction of taungya (Agyeman, et al. 2003).

In September of 2001, then President John Kufuor led a kick off ceremony to launch the modified taungya program at Ayigbe in the Brong-Ahafo Region, a community that had already started the program. The modified taungya system (MTS), which allocates degraded portions of forest reserve to farmers to grow food crops alongside trees that they will have an opportunity to benefit from in the future, has become a central project to establish the sought after 20,000 hectares of forest per year (Aronsen, et al. 2010). In addition, it became a major component of Ghana's Poverty Reduction Strategy (Kalame, et al. 2011). To date, thousands of farmers have established plantations within degraded reserves throughout southern Ghana; a trend that has continued even though the presidency has gone to a rival party that has the ability to influence and change development agendas.

In preparation for the kick-off event, two high ranking forestry officials debated on whether Kufuor should stand in front of trees or food crops for the ceremony, an event that would be attended by the media. After all, the CFMP program is a multiple-purpose program. After some discussion, which I learned of from one of these men, it was decided that trees should be emphasized considering the program was headed by the FC. Interestingly enough, newspaper articles hardly mention the program's food production based benefits. Instead, a major focus was on benefit-sharing agreements; a new and innovate mechanism that would deliver more success than the previous practice of taungya because farmers would now have an interest to care for trees through benefit-sharing agreements.

A major component of benefit-sharing agreements are the bundled benefits and responsibilities that are allocated between farmers, the forestry commission, traditional landowners, and forest adjacent communities. Farmers are responsible for planting and caring for trees, the forestry commission provides technical expertise, chiefs provide the land, and communities safeguard the plantations from fire. Within this mix, farmers and forestry personnel are the major “hands on” actors. For the farmers, they would be tending to the trees on a frequent basis as they farmed their crops. As for foresters, they identify and allocate degraded areas, monitor felling to make sure economically valuable trees²⁶ are not felled, select and deliver specified species, and assist with proper pegging and planting techniques. For their efforts, farmers are to receive 100% of the benefits from the agricultural crops as well as 40% of timber revenue after harvest, the FC receives 40%, landowners receive 15%, and the community receives 5% (FAO 2002; Ledger, et al. 2010).

In order to secure benefit-sharing agreements, land-lease agreements need to be negotiated with the traditional land owning authority. As outlined in chapter three, the Forest Ordinance Act of 1927 gave authority to the colonial government to reserve parts of the country’s forests. Although the bill did not alter ownership of reserves, it vested control of them in the government to manage in trust for communities (Acheampong and Marfo 2011; Amanor 1999). Thus, as the vested controller of reserves the forestry commission has led the initiative to implement both benefit-sharing and land-lease agreements. To make these agreements legally binding these arrangements were brought for ratification before

²⁶ For example, Ceiba, Ofram, Mahogany, Sapeli, Wawa, and Koto.

Parliament. According to several forestry official sources I spoke with, Parliament has proposed to reduce the percentage that would go to the Forestry commission and land owners. This has led both the commission and chiefs to contest proposals that have been put forth. As of 2009, no legally binding agreements had been passed.

In general, modified taungya has been regarded as a “win-win” approach toward achieving sustainable development. Farmers are able to improve nutrition intake and increase income from their food crops while receiving long term income from the trees they plant at the same time that degraded areas of forest reserve are reforested and national development is enhanced through a strengthening of the timber industry and increased food security (Agyeman et al. 2003; Blay et al. 2008; Fobissie et al. 2011; Ledger 2011). Put together, these attributes lead to greater security, equity, and sustainability. The program has, however, encountered setbacks. In particular, the major securing mechanisms of benefit-sharing agreements and land lease agreements have yet to become fully legal. In addition, and relatedly considering the passage of laws is a political process, the forestry commission and chiefs are contesting the low levels of benefit percentages that have been proposed for them to receive.

The legal ambiguity of the program has led to fears that the program, and the potential benefits it can have on forest-fringe communities, is in jeopardy (Ledger 2011). What has largely been overlooked, however, is the fact that thousands of forest users now have access to enter these new frontiers, with or without benefit sharing and land lease agreements. This leads to important questions such as what kinds of governance arrangements have been established, how have they shaped benefit flows, and how are these patterns impacting

livelihoods and forest cover? The importance of these questions is to gain a better understanding of how forest-related resources are being accessed, controlled, and used.

Since the inception of Ghana's forest reserves, which have been ostensibly controlled by the state, they have required constant patrolling²⁷ via fortress conservation (Brockington 2002; Igoe 2004) carried out by forest guards. Following the advent of liberalized approaches to forestry management, however, emphasis has shifted from centralized to more open management arrangements (see Ch. 4). This, in addition to the retrenchment of forestry personnel, has led to declining influence of the FC in reserve management. In fact, during my time in the Koben/Nkuntin area I never saw or met a forester in or around the reserve. When I brought this up with the plantations manager who oversees the reserve, he told me how hard it has become to monitor activity taking place within the reserve considering constant cuts to resources he has available to him.

Within modified taungya it is the forestry personnel who oversee the technical details of the program and determine where plantations are established, what trees species get planted, which tree species get preserved during preparation, etc... However, there has been tremendous focus on getting farmer benefit-sharing agreements signed within communities. This effort has been slow. In fact, by 2008 there was only one community along the Jimira Reserve that had started the process. This, I was told, is why I never saw a forester.

Because of the lack of forestry personnel to monitor activity taking place within the reserve, there is good reason to believe that the management of modified taungya conversion

²⁷ Patrolling is carried out by guards who patrol the perimeter of reserves.

areas has largely been a process of negotiation between forest users; a process that would very likely have unanticipated consequences. It is important to think through, however, to what degree such a scenario would erode or reinforce the goals and objectives of the program.

Conversion of the Jimira Forest Reserve

By 2002, it had been over 20 years since forest fringe communities around the Jimira forest reserve had farmed the forest. Ever since then president Jerry Rawlings²⁸ ended the taungya program countrywide in 1984, reserve management had largely returned to strict fortress conservation. Thus, farmers were officially sanctioned against going into the reserve. However, this did not lead to a total stoppage of farmer activity, but rather, a slowing of activity. In fact, when I inquired about this time period with farmers they said that people were still going into the reserve to collect trees to make mortars and pestles, collect firewood, as well as farm illicitly – often times by bribing forestry guards. Even so, it became much harder for people to conduct activity within the reserve during this time period.

Access to the reserve changed significantly in February of 2002 when a radio broadcast announced the reintroduction of taungya-style reforestation of Ghana's forest reserves and an invitation to apply for land. Following the announcement, two community leaders from Nkuntin traveled 30 kilometers to the regional forestry office in Kumasi to get an area for the Nkuntin community only to learn that they needed to submit an application to the district

²⁸ Jerry Rawlings was president from 1979 – 2001. While he served as dictator from '79 – '92, he initiated Ghana's transformation from dictatorship to democracy. In 1992 he was elected as Ghana's first democratic president, subsequently winning reelection in 1996. It was during his first term that the Forestry and Wildlife Policy of 1994 was ratified.

forestry office located in Nkawie, just 7 kilometers from Nkuntin. The men, both of whom had farmed taungya within the reserve during the 1960s and 1970s, simply thought the best plan of action would be to go to Kumasi considering their previous knowledge of allocation procedures going through the regional district office. They did not know that the district forestry office, which was established since the men participated in taungya, was processing all community applications.

After having finally visited the district office, the men learned that they needed to provide the names of the farmers within the community that would like to participate as criteria to apply. Interestingly enough, they were not informed of benefit sharing arrangements at this time. In fact, they only learned of this incentive much later. In hindsight, however, these men thought that this did not matter because that they believed the incentive for farmers to participate stemmed from the desire to farm free fertile land just as it had during the previous taungya program

To solicit the names of farmers who would be interested in farming taungya the two leaders organized a community meeting by beating “gong gong.”²⁹ It was during this meeting that it was decided that the two men who originally traveled to Kumasi would become the community leaders because the application required there to be leadership. After collecting the names of interested farmers the two men submitted this list to the district office and the district manager allocated a degraded portion of the reserve near the community based on his

²⁹ Gong gong was the term used in the community to organize a meeting. A drum was used for this purpose.

knowledge of forest conditions. This knowledge was acquired through “personal experience,” as well as consultations with field staff and the district maps manager.

The maps office houses maps detailing active and planned activity within the Jimira Reserve, its forest conditions³⁰, as well as community taungya allocations past and present (figures 11 and 12 show classifications). Upon reviewing these records, I found that the areas that were allocated to communities fell within areas that were either designated as “convalescent” or in need of “conversion.” Interestingly enough, many of the areas that have been allocated to private investors do not necessarily fall within these areas of designation. Instead, many private plantations have been established within “protected” and “production” areas; a growing trend that will be highlighted in chapter 6.

³⁰ Conditions are based on four classifications: 1) protected; 2) In production; 3) Convalescent; 4) Conversion

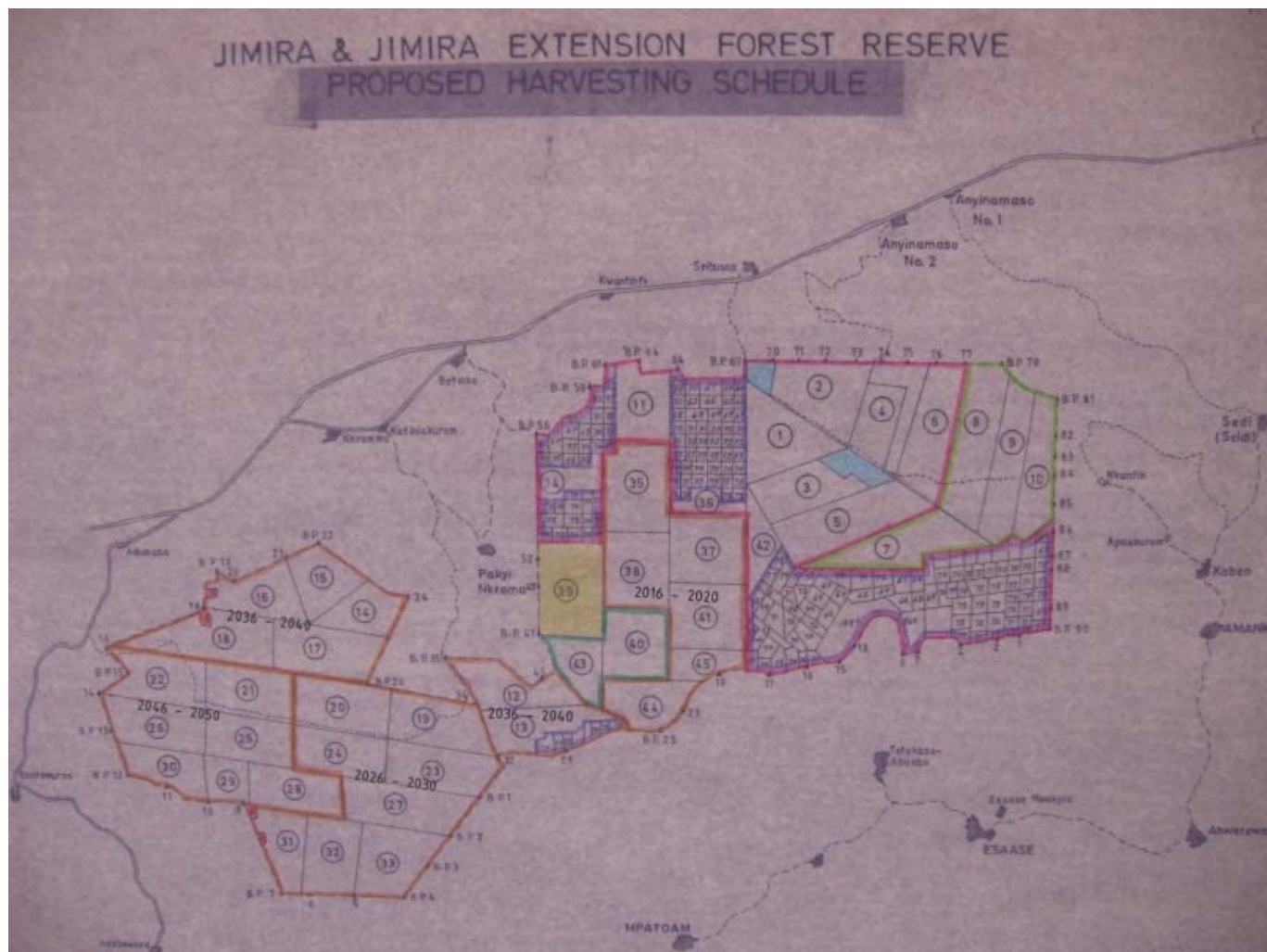


FIGURE 11: CLASSIFICATION AREAS WITHIN THE JIMIRA FOREST RESERVE (GHANA FORESTRY COMMISSION). THE ORANGE OUTLINED AREA IS SET TO BE HARVESTED. THE YELLOW BLOCK IS A PROTECTED AREA (NOT TO BE HARVESTED). THE GREEN OUTLINE ON THE EAST OF THE RESERVE IS A CONVALESCENT AREA (THE AREA WHERE NKUNTIN MODIFIED TAUNGYA WAS TAKING PLACE). THE PURPLE AREAS WITH SMALL SQUARES REPRESENT OLD TAUNGYA PLOTS.

land to establish plantations, did not have the fortune of proximity. While the area that they were allocated was just inside of the reserve, the reserve was a couple of kilometers away. On top of that, farmers needed to scale steep terrain to reach the edge of the reserve.

As it turned out, many people within Koben ended up buying plots from Nkuntin farmers who decided to sell their plots. As will be highlighted in the next chapter, they also bought plots from CFC members because the committee was allocated land by the forestry commission to establish a demonstration plot. While these allocations were further away, the majority of their walk would be along the relatively flat Koben/Nkuntin road. Still, many people did farm the Koben land. In fact, those who farmed this area said they preferred it because they found the land to be quite fertile. This was not surprising to me considering the resource walks I conducted through the Koben allocation area often times took me through relatively thick stands of trees that surrounded the allocation.

Land Hoe!: The Allocation, Preparation, and Management of Agro-Plantations

Since the early 1920s, about 16% of Ghana's land area has been designated as either game or forest reserves (Boakye and Baffoe 2008). This had a major impact on rural production systems because potential arable land had become enclosed. Granted, during this same time period major investments were being made in the intensive cash crop production of cocoa (see chapter 3). Thus, many farmers were able to provide for their household needs by farming smaller allocations through intensive means. In fact, some people were even able to cease the opportunity that intensive cash crop production provided in order to accumulate wealth (Hill 1997).

From the 1920s until the 1970s Ghana was the leading exporter of cocoa (Tiffen, et al. 2004). Since then, however, there has been a steady decline. The factors leading to this trend include low producer prices, the spread of disease, and declining productivity of aging trees (Woods 2004). The economic uncertainty that has resulted from such a dependence on a narrow export base (Higazi 2005), when combined within growing concerns regarding land availability and declining productivity, has the potential to put major constraints on households. This was a concern that was echoed by the farmers I interviewed. Indeed, many of them identified the above factors as leading to increased hardship.

In addition to the above factors, farmers also raised concerns that northern groups migrating south to sharecrop cocoa with the option to buy the land were driving up land prices. Farmers that I interviewed also identified the prevalence of grasses and weeds on their farmland as contributing to their productive hardships. To combat this problem, farmers were either working harder to weed by hand or they were applying weedicide. Many farmers that I met lamented that the price of weedicide seemed to always be going up while their yields remained the same, or even went down.

Considering the above pressures that have been put on rural production systems, it is not surprising that many farmers in my research area identified modified taungya as being very beneficial for the community. In all, roughly 50% of the community was participating according to rough guesstimates given by community members. When interviewed, taungya farmers identified the following reasons for participating: availability of free fertile³¹ farmland, ability to

³¹ Reserves are considered fertile due to vegetative growth.

let farmland lay fallow, ability to side step land-based disputes, ability to diversify production strategies (e.g. between cash crops and food crops), ease of weeding³², ability to pay school fees, as well as the ability to accumulate wealth. Farmers who chose not to participate said that they had abundant fertile land, considered the reserve to be too far away, or did not want to participate in community labor schemes.

Within agroforestry systems coordination and timing of planting are essential to allow trees to become established before the dry season. Thus, farmers need to be allocated land and have it prepared to farm before the rains come, foresters need to deliver seedlings at the right time, and farmers need to plant them as soon as possible. Foresters then need to provide guidance and training to plant the seedlings (e.g. pegging and planting³³). In addition, farmers need to have an incentive to devote their time and effort, they need to be able to gain access to participate, have the means to prepare their plots and procure necessary inputs, as well as have the ability to harvest and distribute their crops. Taken together, these social and agro-ecological processes (Schroeder 1999) are important factors in shaping the social, economic, political, and biophysical landscape within this new frontier.

In the first year of allocation, every farmer who expressed an interest in farming got a piece of land. Upon further investigation into access rights, people told me that they had a right to receive an allocation as a member of the community. This designation was rather vague, but membership was roughly bounded by living in the Koben/Nkuntin area. Ethnicity did not play

³² There is less proliferation of weeds because less light reaches the ground and there is the possible suppressive effect of mulching.

³³ Pegging and planting is the process of measuring planting distances, pegging these marks, and then planting trees at these points.

much of a determiner. In fact, my research assistant came from a different area yet received the same plot as everyone else. There were also a few farmers from the north who had plots. They lived on the outskirts of the Nkuntin village. Most northerners when interviewed, however, said that they migrated to the area to sharecrop in cocoa, not invest their time and energy in modified taungya.

When it came time to prepare the land, the community was divided into male and female groups. The men would clear the land while the women would pool their money to prepare food for the men. Not all men participated, however. Those who did would also contribute money to the effort. Once the men started clearing it took a few days for them to clear the whole allocation. The men would cut down small trees and chainsaw operators were hired to fell the large trees. The money to hire these operators came from a second pool that was collected by all the farmers. In the process of preparing the land, the men cleared nearly everything. Forestry personnel were not present for this activity, thus many “valuable” trees were cut. The men did, however, leave a few trees standing. When I inquired about the reason for leaving trees people told me that it is helpful to have shade to sit in. Thus, while many economically valuable trees were cut other trees were left standing for their use value.

After felling, the vegetation was burned off. After this, forestry personnel came to mark off individual plots and demarcate where the trees would go. In the process, the forestry commission paid farmers to produce pegs. The money to fund payment to farmers came from the Forest Planation Development Fund Act of 2000. As one forestry official put it, this money was provided as a way to provide an incentive to build interests in the program. While farmers referred to these payments, which were delivered some months later, as a kind of a token

payment that was not worth very much money, many farmers I talked with spoke fondly of getting paid for their efforts.

After being allocated individual plots, farmers often times salvaged wood debris that was left on their plot. While most of this consisted of wood that could be used for cooking, some farmers collaborated with chainsaw operators from the community to sell them trees that the operators could make into lumber or firewood to sell to roadside vendors. When asked whether or not a person could collect this wood without the permission of the farmer whose plot the wood came from, people I interviewed gave mixed reactions. While there were mixed answers on whether or not it is okay to take firewood for household use, all respondents said that a person needs to get the farmers' permission to take trees.

Procurement of seedlings consisted of the forestry commission buying cedrela seedlings from one man within the community who had an established nursery for this purpose of providing trees for the program. He did not, however, have enough seedlings to provide all the necessary trees. Because of this forestry personnel also had to bring seedlings in from the outside. The planting of seedlings consisted of farmers picking up their share of seedlings from the man's nursery and planting them where the pegs were staked within their plots. This was done at the beginning of the rainy season so as to give the seedlings a good chance of getting established before the dry season set in.

In addition to planting the trees, farmers started sowing plantain and other crops (e.g. corn, tomatoes, eggplant, etc...). Within this mix most farmers focused their efforts on the production of plantain. When asked why they chose plantain as their main crop, most farmers

said that they were simply following what they tended to grow on their off reserve farms. The farmers that chose other crops, such as tomatoes or eggplants, typically came from regions of the country where these crops are widely grown. When asked about what the difference was between farming on and off-reserve, many farmers talked about how weeding on reserve is much easier. This, in addition to the fact that the fertility of the land provides high yield, was identified as being a major benefit of farming in the reserve. In general, growing plantain is attractive to farmers due to their low labor requirement in comparison to cassava, maize, rice and yam. The fact that labor requirements can be further reduced when farming in the reserve can be a major incentive.

Plantain takes around nine months to mature, so by the end of the year farmers were able to start harvesting bunches from their plots. By the end of the year market women started to come to the reserve to buy bunches from farmers. By the time I arrived in the 2008 the relations between farmers and these women had become well established. In fact, many of these women have been visiting the reserves for several years; some of them coming from as far away as Kumasi. Considering this distance, I asked the women why they came. One woman told me that even though they have to hire a vehicle to transport the produce, for which they often time pool together to hire, they are assured that they will not go away empty handed. In addition, they liked the fact that they could get more money from selling these bunches because they were so big. As for the farmers, they said they liked the fact that the women often times would go out into the reserve which made it easier to sell the produce.

As for the management of trees, farmers often times emphasized that they were planting trees for the good of the nation. The fact that nothing was brought up about benefit-

sharing agreements stems from the fact that they had no idea they existed. Far from being a unique scenario, program policymakers have identified the fact that this information is not getting out to farmers program wide as a problem that stems from the slow out rolling of benefit-sharing agreement signing with communities. The fact that farmers identified growing trees for the good of the nation is not surprising considering that this was a major component of old taungya arrangements. What was surprising, however, was how this response contradicts the findings on farmer behavior within the original taungya program. The fact that many people often times identified me as working with the forestry commission may have something to do with this response.

While the attitude people had toward the planting of trees is questionable, their behavior was less so considering trees were being planted. While the farmers had no idea about benefit-sharing agreements, most farmers I interviewed stated that they were well aware of the fact that they needed to plant trees to receive future allocations of land. This was a condition that forestry officials told me they had heavily emphasized. The negotiations that were taking place was, however, a two way process. Indeed, the community leaders said they provided food and gas money to the forestry personnel that would visit. When inquired about whether or not this was a part of procedures, one of the leaders said no. He did, however, stress how it is always good to give a reason for forestry people to look favorably upon the community.

Subsequent Allocations, Preparation, and Management

The two subsequent allocations of degraded land the community received took much the same format as the initial allocation. The community did not, however, submit applications. The leaders simply went to the district forestry office and set up plans to have more land allocated. Preparation of the land also took the same collective arrangement as before. However, there was mixed reaction to this plan considering many farmers believed that coordination was either too complicated or that people slacked on their duties. In fact, some people got so disgruntled the community decided farmers would clear farms on an individual basis for the fourth allocation. This never came to fruition because private investment ended up supplanting the program before a fourth plot was ever allocated.

Subsequent pegging and planting was conducted by the community. During the first round of pegging and planting the community leaders were trained in marking procedures. Thus, forestry personnel did not take part in this process. They did, however, help procure cedrela seedlings. Like with the first allocation, the forestry department bought some seedlings from the nursery in town and got the rest from other sources. The farmers would then take these seedlings to their farm to plant. By this time, most farmers were farming more than one plot. By the end of the third year many of them were farming three or more plots. The ability to farm more than a farmer was originally allocated stemmed from the fact that more and more land was being sold and bought. Still, however, most people in Nkuntin were farming three or less plots. Many of the buyers came from the Koben community. Many of the Koben farmers I

talked with who were farming the Nkuntin area said that they did not want to walk the rugged terrain to get to the Koben allocated land.

As for the management of trees, there was a noticeable difference when compared to the first allocations. In particular, the spacing of trees within the first allocation is patterned symmetrically while the others are spaced asymmetrically. As it turned out, the community leaders never ended up doing the pegging they were trained to do. Farmers were, however, still planting trees. When asked how they would space them they said they would simply scatter them around their plots. While this was very different from the protocol to peg and plant, they said they were planting about as many trees as they did the first year.

While it can be assumed that the forestry commission considered the level of planting the farmers were doing was satisfactory, considering they allocated more land every year of the program, the continued maintenance of the trees is another matter. By 2008, farmers had long abandoned their modified taungya plots because the shade from trees made farming impossible after two-to-four years. They are, however, still responsible to care for the trees they planted. In June of 2008 the community was notified by the plantation department at the district forestry office that they needed to weed their allocations. The typical response of farmers, however, was that they would need to get paid to do so. Many farmers noted how the forestry commission paid them to make pegs during the first year. Why couldn't they do it again? According to one forestry official I routinely spoke with, the forestry commission was able to provide this kind of funding during the initial roll out of the project but since then the funds to do so have dried up. The farmers never did return to do the weeding during the time I was there.

The Building of “Second Rooms”

Through interviews and informal interactions with farmers during my time in the Koben/Nkuntin area I learned that the cost of household goods, building supplies, farming supplies, and school fees were viewed as putting a strain on many people. In particular, the rising costs of agricultural inputs was a major concern. This, when combined with the fact that farmers had to use more and more fertilizer and weedicides to maintain their yields, has put additional pressure on households.

Farmers employ several different livelihood strategies to support themselves based on the resources that are available. This can include farming, petty trading, animal rearing, remittances, etc. Often times, people employ a mix of these strategies to meet household needs. For example, people may go to farm in the morning and sell bread at night. Several farmers I interviewed identified taungya farming as an increasingly important livelihood strategy. Jennie Ledger (2011), who studied the impacts of modified taungya on farmers' livelihoods, reports that farmers in her research area attribute modified taungya with making it easier to get farm produce, pay education expense, and access land for farming. In addition, 36% of respondents saw modified taungya as providing a safety net while 61% saw it as a significant source of income (Ibid). In the Koben/Nkuntin area many farmers relied heavily on modified taungya for their livelihood (e.g. as a sole source of farmland, as a way to procure necessities, as a way to let unfertile farmland go fallow, etc.). In particular, they said it was helpful to have the option to either consume their crops or sell them if they wanted to.

While many people in the Nkuntin area, especially the poorest households, were farming taungya as a safety net just like in Ledger's area, many others were "building second rooms." Often times this term was used to describe the overall benefits that have come from modified taungya. It derived, however, from the fact that so many people did start to build on to their houses once the program started. One man I interviewed had built 3 extra rooms to his house and directly attributed it to modified taungya. When asked how this was possible he stated that he was "not a lazy person," so he farmed taungya on top of farming a large tract of land off-reserve. It should be noted that this man was young, healthy, and already had family farmland as a safety net.

When evaluating the economic impacts of modified taungya on benefit flows it is also important to gaze beyond forest fringe communities and consider the multiplier effect of developing plantations within these new frontiers. Indeed, forest reserves have accumulated a tremendous amount of productive capacity in the form of fertile soil and relatively lush vegetative cover that has accumulated over the years that is now being tapped in the form of food crops, firewood, lumber, etc. Some people consider these newfound resources, which are largely being distributed by chainsaw operators and market women buying plantains, as contributing to national development on a wider scale. In fact, one forester I interviewed had attributed what he considered to be a large abundance of plantains that are at market to forest reserve production. In addition, he attributed a lot of the lumber and firewood on the domestic market as also coming from taungya-based activities. While many of the benefits he is referring to are now coming from activities stemming from private investment, modified taungya is certainly a part of the mix.

Conclusion

To date, thousands of farmers have taken part within the modified taungya program, converting thousands of hectares of degraded areas into plantations in the process. In the Jimira Forest Reserve several hundred hectares of land has been converted to plantations via modified taungya. Like off-reserve management, the forestry commission and chiefs are seeking to inhibit the devolution of political-economic control. Unlike off-reserve management, however, farmers working within the Jimira Forest Reserve were largely able to control governance arrangements as new frontiers of opportunity opened up within the transition from closed to open management of the reserve.

The intent of the modified taungya program has been to reforest degraded portions of forest reserve, meet the short and long term needs and interests of forest-fringe communities, as well as strengthen national development (e.g. provide employment, food security, and maintain a strong timber industry); all major components of plantation development in general. Within the goal to establish 20,000 hectares a year nationwide, modified taungya has been a major conduit of establishment. In the process, thousands of farmers have established plantations within degraded portions of reserves in the south of Ghana. Within the Jimira Reserve, at the same time that farmers entered the reserve the influence of the forestry commission to control management, as well as fulfill their duties within the program, diminished during the shift from centralized to liberalized forms of management.

The intersection of the program's intent and scope with a more liberalized approach toward managing these new frontiers created a near vacuum of control that forest users readily

filled because of the socially and ecologically-based incentives of working a relatively lush and fertile landscape with minimal entry costs. Indeed, while forestry personnel were present for some of the activities taking place, including pegging and planting during the first year, diminishing resources led to an inability of the plantations department to adequately fulfill their duties. Thus, forest users had tremendous leeway in determining how plantation development would be carried out.

The fact that forest users had a tremendous amount of access and control of the landscape does not mean that the forestry commission had no influence. Indeed, they maintained control in allocating land to be converted to plantations. This process, however, was not a straight forward process of the community submitting an application to participate, forestry personnel demarcating land, and farmers following the guidelines of the program. Instead, there was interplay of negotiations that included forestry personnel putting pressure on farmers to plant trees in order to receive future allocations while community leaders provided incentives to “look favorably” upon the community with tokens (e.g. gas money, food, etc.). Thus, power relations were dynamic with no single actor having outright control.

Regarding reforestation efforts, it helped that forestry personnel were able to apply pressure to get farmers to plant trees because farmers were interested in the other benefits associated with plantation development. During the time of taungya, farmers treated tree planting as being the domain of national interests so there is good reason to believe that they would not plant trees if left to their own interests. In addition to this pressure, trees were being planted in areas of the reserve that were either classified as being in “convalescence” or “conversion.” This is an important point considering that plantation development within the

private investment program, which will be covered in the next chapter, has been heavily carried out in areas of “protection” and “production.” Lastly, the fact that forestry personnel provided seedlings in a timely fashion helped because it is essential to plant trees at the beginning of the rainy season to help them take root before the dry season.

Regarding poverty alleviation, Blay et al. (2008) argue that modified taungya holds great potential to reduce poverty. While their study focuses on the potential of benefit-sharing agreements, forest users in the Nkuntin area benefitted from being able to tap the ecological benefits that have built up over the past several decades. These resource are often times in abundance when compared to off-reserve farms even if the resource base has diminished. While this type of extraction activity has the potential to degrade the landscape even more, the spots of relatively good vegetation may indicate that forest cover may be no worse off considering this is a convalescent area. There is also the possibility that it has improved. Thus, this landscape has provided major economic benefits without significantly affecting forest cover, if at all.

Another factor that helped households, less well-off and better off alike, was the low entry costs considering the land was free. This, when combined with the fact that all members of the community had an equal opportunity to farm within the reserve, expanded the availability of livelihood strategy options to help relieve production and consumption related pressures for all as well as helped people accumulate wealth if they were in a position to do so. As it turned out, roughly 50% of households pursued this option. Those who opted not to participate typically stated that they had abundant fertile land, the reserve was too far away, and they did not want to participate in community labor schemes.

In addition to local level benefits, the impacts of modified taungya also reached far and wide considering market women and chainsaw operators were distributing food, firewood, and lumber to markets as far away as Kumasi. Addressing food security within Ghana was a major component of president Kufour's vision for modified taungya. While this aspect has been largely overlooked, in fact most newspaper accounts of the program discuss the benefit-sharing agreements of trees, reserve crop production is contributing to the country's food system. Another factor that is overlooked is the production, distribution, and consumption of standing trees. Again, the major focus of the program is on the establishment of plantations. Largely overlooked have been the benefits stemming from the felling of trees. Indeed, farmers would sometimes go into agreement with chainsaw operators to collect firewood and lumber to supply the local market, a resource that has been in short supply due to the crackdown on chainsaw activity, timber operator emphasis on export markets, and rising demand for domestic lumber.

In sum, modified taungya has provided opportunities to alleviate poverty within forest-fringe communities while potentially increasing forest cover in the Jimira reserve considering the incentive structure that emerged provided farmers with relatively secure access to control and use of forest-related resources at the same time that forestry personnel were putting pressure to plant trees. Perhaps most importantly, the beneficial impacts have been felt far and wide because the program has provided equitable access to land while the benefits that stem from the program have been distributed beyond the immediate program area. However, the continued ability to address the needs and interests of farmers while improving forest cover in the process have come under threat, as the next chapter will highlight.

Chapter 6: Deforesting while “Reforesting”: Private Plantation Development in the Jimira Reserve

By the middle of August 2008, after several months of visiting the east side of the Jimira Reserve, I had the opportunity to go to the west side. From conversations that I had been having with the district plantation manager, as well as the manager of the reserve, I had been getting reports that there was a lot of private plantation development taking place there. Unlike the east side, where timber operators had already cleared timber and had been establishing plantations for a few years, the west side of the reserve was relatively recently being opened up to plantation development. In addition, the foresters informed me that the scope and level of activity that was taking place there was much more than what had taken place on the east side.

On two separate occasions I went to the west side of the reserve, observing the activity that was taking place there while talking with farmers and timber operator employees about the activity. I took the first trek with the manager of the reserve. He said that there was a farmer he would like me to meet, so we started walking toward his farm. We walked into the reserve from the road that bordered the northwest portion of the reserve and walked several kilometers into it. Unlike most of the east side of the reserve, which was rather flat except for the rugged terrain near Koben, the west side was much hillier. Another feature that stood out were stands of old growth tree cover. Strikingly, new plantations often times butted against these stands of trees (see figure 13). When asked about this contrast, the manager informed

me that the timber operators would continue clearing more next year considering they had written up 10 year development plans.



FIGURE 13: MODIFIED TAUNGYA WITHIN WESTERN PART OF THE RESERVE (MYERS 2008).

As we continued our walk down the dirt road, a path that was made by the timber operators who were working in this area, we started to hear the sound of a chainsaw in off in the distance of the direction we were walking. After about fifteen or twenty minutes of walking, passing by many farms in the process, we came close to where the noise was coming from. The

manager stopped, asked me to stay put, and went into the forest for about ten minutes. Upon returning, he said that he had caught some chainsaw operators felling trees so he told them to leave. I knew I should not press the issue. After 5 or 10 minutes after leaving the scene of the talk we came upon a pile of logs alongside the road that had clearly been cut by timber operators. The manager sighed in disgust. When asked why, he said that these particular species were not to be felled.

Shortly after leaving the pile of logs we arrived at the farmer's plot. The farmer, who I will refer to as Kofi, was there with his truck and a couple of workers. Unlike most of the farmers who were allocated land to farm their crops while planting trees for the timber operator, Kofi was from Nkawie, the district capital where the district forestry office is located. In addition, he was not a small holder farmer, he had farms throughout the district that he tended. When asked how these other farms compare to this one he enthusiastically pointed out how the fertility of the land produces large harvests. The major disadvantage, he said, was that the terrain of the land requires that he have a four wheel drive truck, especially during the rainy season.

I made my second trip to the west side of the reserve a few days later with Kofi. This time, instead of walking from the road, we took his truck. Unlike the previous excursion, we were able to go deeper into the reserve. In the process we stopped and talked with farmers as well as workers of one of the timber operators who was developing plantations within the reserve. During one of the stops we made to speak with farmers, a truck hauling timber passed by (see figures 14 and 15 for photos of the truck). It may have been pure coincidence, but when

we passed by the area where the logs were piled during my last trip to the reserve the logs were gone. Wherever the source of this timber came from, it was heading to a mill.



FIGURE 14: TIMBER TRUCK HAULING TIMBER OUT OF THE JIMIRA FOREST RESERVE (MYERS 2008).



FIGURE 15: BACK END OF TIMBER TRUCK HAULING TIMBER OUT OF THE JIMIRA FOREST RESERVE (MYERS 2008).

Often times while conducting my research in the Nkuntin area I wondered what the landscape looked like before timber operators arrived. By 2008, it had been three years since timber operators had cleared the land. While taking the trip to the west side did not provide an exact window into what took place on the east side, the activities that were taking place provided a glimpse into what had taken place considering many people in Nkuntin described similar activity of extraction. A major difference between the areas, as several foresters

informed me, was the level of forest cover previous to development. This is a point that is supported by the vegetative map of the reserve (see figure 5)

When I started visiting the reserve modified taungya had given way to private investment within the east side of the reserves and farmers had been farming on timber operator allocations for several years. The operators, however, were nowhere to be seen. Why did their involvement come to a halt? Who was overseeing operations? How did farmers become a part of the mix? Perhaps most importantly, how were livelihoods and forest cover being affected in the process considering poverty alleviation and the rehabilitation of degraded landscapes were major components of the initiative?

Ghana's Private Plantation Development Program

As highlighted in chapter four, the national forest plantation development program (NFPDP) has taken three main approaches to establish plantations within degraded portions of Ghana's southern forest reserves. The first strategy has been modified taungya. The second strategy, which has been funded through the Highly Indebted Poor Countries (HIPC) program, provides a wage to plantation workers to establish and maintain plantations. The third strategy, which is the focus of this chapter, involves the release of degraded portions of forest reserves by the FC to private entities.

Like modified taungya, private investment is premised on land-lease and benefit sharing agreements. Unlike modified taungya, farmers are not a part of the breakdown of responsibilities and benefits. Because private investors are to provide the necessary inputs to establish plantations they are to receive 90% of future revenue benefits. Private investment

addresses the dual goal of alleviating poverty while reforesting degraded portions of forest reserve by creating employment opportunities through establishing large-scale plantations. To ensure compliance the forestry commission vets and endorses the reforestation and business plans that private investors have presented. After approval, investors are then monitored through periodic field visits by the plantation department (PD) to ensure compliance with the approved reforestation plans (Ghana Forest Services Division 2007).

Like the modified taungya program, as of 2009 benefit-sharing agreements had yet to be ratified. This has been deemed a major impediment to the success of the program. In fact, it was the major theme of a private investment workshop I attended in August of 2008. The majority of participants at the workshop were somehow affiliated with the timber industry. There was, however, one Dutch investor – a professor of forestry -- who was heading a group of European investors. He told me that his main reason for attending the workshop was to put pressure on getting signed agreements because his investors need to have confidence that they will see a return on their investment. This type of foreign investment, while thus far remaining small within the program, follows a popular trend of investing in forests for future returns. For example, Timber Investment Management Organizations (TIMOs) are often used by institutional investors searching for a diversified timberland portfolio, including “green” projects (Maidell 2008).

In addition to insecure benefit sharing arrangements another impediment to the program, and one that may be related to the first, is the fact that many private developers have been inactive and/or performing below expectations (Ghana Forest Services Division 2007). What has largely been overlooked, or at least not emphasized, is that most private developers

have been timber operators. What is motivating so many timber operators to take part and then become inactive or low performing? Who is governing these areas of conversion? How are benefits being distributed? How have livelihoods and forest cover been impacted in the process?

In sum, the private development program has the aim of reforesting degraded forest reserves while alleviating poverty through employment. Like modified taungya the program has experienced unintended setbacks, especially low performance. This setback may very well stem from a reluctance to develop plantations due to the uncertainty of future returns. It might, however, stem from the fact that other incentives trump an interest in planting trees, just as the incentive to farm the forest trumped tree planting for Nkuntin farmers. If so, are there any mechanisms to ensure the planting of trees even though there is a lack of interest, as there was within modified taungya (e.g. future allocations based on past performance)?

In the next section I illustrate how the Jimira Forest Reserve has gone from relatively small-scale plantation development within classified conversion and convalescence areas to the rest of the reserve being allocated to timber operators, often times in production and protected areas. A major reason given by respondents for this proliferation, a process that many see as bringing about major deforestation, has been that timber operators can simply “make phone calls” so they can go in and harvest highly lucrative timber species. As the next section shows, the inroads to access this valuable timber partially rests on the ability to define “degradation.” In short, powerful ideas about “degradation” accompany powerful material processes.

Timber Hoe!

As discussed in the opening vignette of chapter four, when I first started visiting the Jimira Reserve I was struck by how there were trees in the modified taungya area while the private investment area was relatively barren. As it turned out, farmers had a major incentive to plant trees after clearing the old growth because the ability to receive future allocations by the forestry commission was based on planting performance. While the incentive to participate was fueled by receiving access to farm the forest rather than the potential to benefit from its production, the overall incentive structure fostered replacement of the old growth that was cleared, potentially increasing forest cover in the process. But what about the dynamics that led to such a barren landscape?

The process of establishing plantations, and how it led to so few trees being planted, will be taken up in the next section. For now, I turn to how the areas that timber operators were allocated also had incentives embedded within them that had nothing to do with the benefits being offered through the program- namely standing timber. In the process of clearing their allocations for plantation establishment, timber operators in the Jimira Reserve extracted large numbers of standing timber trees within the old growth areas they were allocated – including areas that were classified as protected. How they were able to do so provides a key insight into the socio-political dynamics that are shaping this landscape.

According to many foresters, the Nkawie district has historically been known to have highly productive timber reserves. Like many other reserves in the south of Ghana that have become increasingly degraded, the three reserves in the district have also become much more

degraded. This does not, however, mean that degradation has been uniform. In fact, the 1996 Jimira Reserve forest management plan classified the reserve into areas of conversion, convalescence, protection, and production. However, to date the whole of the Jimira Forest Reserve has been converted to plantation development. How could such a phenomenon be taking place considering many parts of the reserve were not set for conversion, especially the western extension area where many areas were poised to be harvested in a little over a decade? As several foresters put it to me, “phone calls are made.” This was even a fairly stock answer whenever I asked farmers how timber operators got their allocations. In one instance I found out that one operator who was working in the Nkuntin area got their allocation through a well-connected chief.

The fact that placed phone calls influence how reserves get managed was not a significant revelation considering corruption has become nearly synonymous with forestry management. Much more intriguing was the fact that these phone calls also seemed to be creating “degraded” areas in the process. Indeed, whenever modified taungya and private investment were mentioned within newspaper articles plantation development was portrayed as a practice to rehabilitate degraded areas. Also, to what degree had “degradation” provided an inroads for timber operators to access the interests that stimulated the phone calls they were making?

As mentioned above, every private investor needs to have a reforestation plan to demonstrate the soundness of the measures that are being proposed. Upon review of several plans submitted to the forestry commission, including one from the Jimira Forest Reserve, the importance of replanting “degraded” areas was often highlighted. Interestingly, operators

formulated these analyses on their own without input from forestry personnel, the technical arm of the collaborative process. While technical teams are sometimes called out to assess the accuracy of the assessments, visits are few and far between. All the while, these assessments get filed away within the national forestry commission's plantation department office as a record that reflects both reserve conditions as well as the need to do something about it.

The Extraction of Timber in the Nkuntin Area

Starting in 2005, modified taungya gave way to private investment in the easternmost part of the Jimira Reserve. Unlike the small-scale development of modified taungya, which allocated a relatively few hectares to be planted, three private investors were each allocated large tracts of land to develop plantations. These operators, who all hired the same timber “hunter” from the Nkuntin community, extracted hundreds of timber trees and sent them to mill to be processed. This hunter, Kwame (pseudonym), would end up going on to become the “middleman” who managed their plantation development, went into the reserve and located marketable tree species. After marking these trees, a crew would come in to cut the trees, load them onto trucks, and transport them to get processed. The necessary skills that the hunter needed to carry out this job, which included the ability to identify marketable trees that met felling criteria, were acquired from work he performed for a timber operator working within the western side of the reserve as an assistant to the hunter working there.

The fact that there were trees being harvested in the area does not necessarily mean that conversion leads to reduced forest cover, especially considering the area that these operators were working in was classified as convalescent. As one high ranking official informed

me, plantations can produce many more trees when compared to natural growth in these areas. The fact that trees were being harvested *did*, however, highlight that there is more than one incentive embedded within the development of plantations. This incentive, while remaining opaque within the plantation development scheme, had pretty much been regarded as an open secret by many of the forestry officials I interacted with. As one official put it, it was hoped that the revenue made from timber sales would be invested in the development of plantations. This was a high stakes bet that could have negative implications on forest cover, even for convalescent areas, if trees do not get planted.

While the long-term benefit flows that might be derived from future timber revenue from planted trees have yet to materialize, the short term timber-based benefits that have come from the extraction of standing timber is much clearer. The distribution of these monetary benefits was not equally spaced out considering tree spacing was not uniform from compartment to compartment. According to Kwame, two of the compartments had more trees than the third due to the fact that a bush fire that swept through in 1983 had burned a large portion of this part of the reserve.

In addition to the revenue made from selling the trees that were extracted, the overall cost of operations within this conversion area was reduced because operators did not have to pay any stumpage fees. These fees range in price depending on the species. Unlike production areas, where the protocol for tree extraction is outlined within a manual of procedures for production and overseen by the forestry services division, conversion areas fall within the protocol outlined under the management of procedures for plantation development and is overseen by the plantations division. Because it is assumed that plantation development takes

place in degraded areas that have little, if any, marketable species there is no mechanism for collecting fees and royalties. This does not, however, mean that foresters were nowhere to be seen. In fact, the hunter who was working in the area said they would come from time to time to receive their “payments.”

While timber operators received the bulk of the benefit flows stemming from the harvesting of timber, the extraction produced deep inroads into the reserves for chainsaw operators to start using them to more easily enter the reserve and take away whatever trees the operators did not have an interest in taking. Unlike modified taungya, where chainsaw operators came from the community, “outside” operators started to come and extract this timber. At this point farmers had yet to receive their first of several allocations that would be given out over the next few years. Once farmers started clearing their land many of them started to monitor the activity of these operators and demand compensation. The dynamics of these negotiations are covered in the next section. At this early stage, however, the only person they had to negotiate access with was Kwame.

As the hunter for the operators, Kwame became increasingly involved within the plantation development process. According to many farmers I spoke with, from the beginning he regulated activity that was taking place that did not have to do with the timber operator activities. On top of getting paid a monthly stipend from the operators he was working with, he started to levy money from the chainsaw operators who sought to work in the area. In addition, the Nkuntin community put up a traffic toll and started charging both timber operators and chainsaw operators a small fee to transport timber out of the reserve. Thus securing access to

tap the benefits of timber extraction was a dynamic process of give and take between the community and the operators, albeit a give and take with inequitable benefit flows.

In addition to the negotiated relations that took place between the community and operators, timber operators negotiated access to the benefits of timber extraction among themselves, ranging from outright conflict and feuding to cooperation. For example, the operator of one of the allocated areas demanded that the operator of another area compensate him for some trees that the operator took from his area. In another case, the one operator ended up giving his allocation to another operator to pay off an outstanding debt. Thus, like relations between the community and timber and chainsaw operators, the relationship between timber operators was one of give and take, albeit one that can be seen as much more equitable considering they all received significant revenue from the timber they harvested.

Unlike the other operators who were working within the Nkuntin area of the reserve, whom I was only able to interview on one or two occasions, I was able to visit and interview one of the operators on several occasions. The operator consistently maintained that he was participating within the program to benefit from the trees that he was planting. It is worth pointing out that of the three operators developing plantations in the area the tree cover in his area is significantly more than the rest. When questioned about the value of standing timber he did not, however, deny the fact that harvesting standing timber was an appealing prospect. In fact, he would discuss the increasing difficulty of getting timber due to the dwindling supply. Fortunately enough for him, in addition to being allocated a compartment in the eastern part of the reserve in 2007 he was allocated another compartment within the western portion of the

reserve. Unlike his eastern allocation, which is classified as convalescent, his allocation within the west of the reserve had been classified as a protected area. Like modified taungya, future allocations are based on plantation development performance. Yet, as the plantation manager of the district put it, he was underperforming with his first allocation.

Back to the Future: The Extraction of Timber in the Western Extension

By 2008, with the allocation of the western extension area to private investors, the whole of the Jimira reserve had become a conversion zone. In the process the reserve has gone from a relatively few hectares of modified taungya to the majority of plantation development taking place by private investors. Of the many investors who are working within the reserve, all are either timber operators or affiliated with the timber industry. While there is no way of knowing exactly how many timber trees have been extracted from the western part of the reserve, the number is high.

I made my second trip to the western extension with Kofi in his truck. During this outing I asked whether he liked farming in the east side or west side of the reserve. He said he liked working in the west side because the fertility of the land is much greater. When asked about the difference in levels of forest cover between the two sides of the reserve he said that the east side was much more degraded than the west side before timber operators started their activity. He went on to mention that this is why the land is much more fertile in the west side. He also pointed out that this is why the farmers within the local communities are willing to walk long distances to farm allocations they have been provided by various operators.

When asked about why he thought timber operators were interested in developing plantations he said that the ability to harvest standing timber was the major draw. In fact, he thinks most developers will likely lose interest in developing plantations once they harvest the standing timber. He did, however, point out that there was one developer working within the western extension who seemed interested in planting timber for future harvest. In fact, he was so impressed with how the operator was planting trees that we drove to the area where the developer was establishing one of his plantations.

Upon arriving to the plantation area of the operator Kofi was talking about we were greeted by a man who worked for the Kumasi-based timber operator. While his current job was to allocate land to farmers to plant trees, for which Kofi was one, he and a few other workers from the company planted this area. This approach of hiring labor to invest in plantation development, an identified strength of capital-based private investment, has been the exception and not the rule. Even the operator who had developed this plantation had turned to using community labor as a cost cutting measure. As one of the men put it, he simply does not have enough money to develop all of the areas that he has been allocated and cleared using hired labor.

While I planned to visit the reserve for a third time with the reserve manager the outing never materialized. I was, however, able to meet with the manager of the reserve a couple more times to discuss plantation development within the reserve. When asked about private investment, he said that he thought it was a bad idea because operators do not seem very motivated to establish plantations. In particular, he said he was very dismayed by the fact that operators are able to cut whatever species they want. Like many people I talked with, he said

these operators were getting away with this activity because of their connections. He said there was one time that he had seized a truck exiting the reserve with a load of timber and then received a phone call saying that he should let the people go.

As mentioned earlier, the fact that trees are being cut down does not necessarily mean that this activity will affect future forest cover. While potential certainly exists for planted trees to replace old growth the implications of not getting them planted could lead to significantly less forest cover, especially for areas that had thicker forest cover. The fact that many operators appear to only be interested in harvesting standing timber could adversely affect whether or not they will invest the time, effort, and money in getting trees planted. In addition, people within forest-fringe communities may be adversely affected because operators often times are recruiting middle-men and giving them the power to recruit interested farmers to plant trees. Yet, how are land-use arrangements being made, how are benefits being distributed, and how are farmers responding?

From Equitable Access to Labor Capture: The Role of “Middle-Men”

As outlined in chapter 5, farmers had the ability to benefit from modified taungya due to the fertility of the reserve, the ability to negotiate with chainsaw operators and forestry officials, the minimum entry costs, as well as having equal access to farm the reserve considering their membership within the community. To what degree, however, were farmers able to benefit from timber operator plantation development? After all, since 2005 there had been no community-based modified taungya considering the remainder of the reserve had

been allocated for private development yet many of farmers continued to farm operator allocations. Could anyone who was still interested in farming continue to do so? Were farmers being provided with adequate inputs to develop plantations? Were farmers still able to negotiate favorable terms with other forest users?

While modified taungya was led by two taungya leaders who largely filled that role because they were the ones who initiated relations with the forestry commission, the hunter who was employed by the three timber operators working in the area to tag marketable trees for felling was appointed by them to lead farmers in the development of their plantations. Unlike the collaborative approach of combining the efforts of forestry personnel, taungya leaders, and farmers within the development of plantations during the time of community-based modified taungya became a singular pursuit organized and run by the hunter because he coordinated the allocation of land as well as the demarcation, pegging, and planting of seedlings.

The agreement made between the operators and Kwame was that he would be paid to organize farmers, demarcate land to them, peg and plant the trees, and make sure they survived. Because farmers remained interested in farming the forest he had no problem finding willing participants. While Kwame took on the responsibilities of plantation development, at least at first, farmers were still the ones who cleared the land for trees to get planted while also maintaining conducive growing conditions through the weeding activities they performed while maintaining their farms, just as they had through modified taungya. Unlike modified taungya, however, farmers individually prepared the land that was allocated to them. In addition, they had to pay for the allocations they received. Kwame charged a fee for the land depending on

the size of the allocation, a process that contributed to the eventual resistance of farmers to cooperate with Kwame's oversight considering they "paid for this land."

According to many farmers, by the time that farmers started to prepare their plots there were so many chainsaw operators working in the reserve that they would often times cross paths with an operator and then hire them to fell trees that were on their plot. In addition to clearing trees on the farmers' plots, these operators were also felling marketable trees in the surrounding area (i.e. in areas that had yet to be given out to farmers). These trees were left by the timber operators because they either had deficiencies or were considered too small.

While the presence of chainsaw operators during the time of modified taungya did not lead to any notable conflict, many farmers working within the private investment area were unhappy with their presence. In particular, they considered the fact that these operators would come into the reserve at night and cut the trees that farmers had already paid to have felled into lumber and firewood and take it away without paying as theft. I spoke with several farmers who sought to find out who took the wood to seek compensation. Most often, their efforts were unsuccessful. A few, however, were able to track these operators down and receive compensation. While some farmers said that they would be happy to go into negotiation with these operators for them to haul away the trees that were on their plot, others said that they preferred to leave the trees so that they could break down and enhance the soil.

Like modified taungya, many farmers were maintaining multiple plots in the private investment area because additional land was being made available every year. Thus, many of the same farmers who benefitted from community taungya were also in a position to benefit

from the selling, as well as consuming, of the crops they raised. However, many farmers complained that it was more difficult to benefit from the private investment scheme. Two reasons given for this difficulty included increased entry costs and a lack of availability of land. This last point can be considered a bit of a paradox considering the sheer size of private investor allocations in comparison to the yearly allocations of community taungya areas.

While investors felled the standing trees within their allocations within the first year, Kwame allocated yearly allotments of land to farmers. A few farmers complained that they were outright denied entry to farm the area. Others were told that that particular year's allotment had been filled so they would be put on a waiting list. A factor that could have contributed to this was the fact that "outside" farmers were being sold land to farm. In addition to Kofi, the farmer I spent time with in the western extension, there were other commuter farmers who also bought land to farm in the Nkuntin area. As for increased entry costs, some farmers pointed out how they had to hire chainsaw operators on their own to fell trees standing on their plot whereas it was cheaper to contribute to the community pot during the time of community taungya. This concentrated the burden/cost of preparation with the biggest burden being put on poorer women because they had to hire out the felling of nearly all of the trees on their plot.

At first, the responsibility of caring for trees by farmers consisted of weeding around them because Kwame was responsible their planting. This changed over time because Kwame started instructing farmers that they needed to start planting trees on their own. While farmers could procure seedlings by any means that they sought fit, all the farmers that I spoke with that planted their own trees transplanted cedrella seedlings that were voluntarily growing within

the reserve to their plots. A few farmers, however, said that they were unwilling to do so because Kwame was getting paid to do it. Even among those plots where farmers were planting their own trees, many of them had but a few trees scattered here and there to show for.

For many farmers I spoke with the fact that Kwame was getting paid for a job he was not performing led to a scenario where farmers started to resist the planting of trees. In response to this reluctance, Kwame started threatening he would start destroying people's crops if they did not start taking tree planting seriously. In response, many farmers said he did not have the right to do so because the land did not belong to him. In addition, many people said that they paid for their plot so he was not in a position to do so. Some people even pointed out his lackluster performance in planting trees on the plots he farmed.

While relations between Kwame and the farmers soured as time went along, his relationship with the timber operators also became strained because they were not paying him regularly. Thus, like the farmers, he said he was reluctant to plant trees when he was not getting paid for doing so. He did not, however, relinquish his role as middleman. He continued to put pressure on farmers to plant trees while maintaining authority to distribute land to be developed, a job he said was becoming more and more difficult because farmers were increasingly "taking matters into their own hands." Indeed, farmers defied his instructions and started farming areas on their own.

In September of 2008, representatives of one of the operators went to Nkuntin to announce that farmers should not return to previous allocations to farm unless their plots did not have trees. This announcement, which was made within a meeting called in Nkuntin, was in response to a trend identified by Kwame in which farmers were returning to previous plots to

farm and in the process were cutting down the original trees that they had planted. This did not just affect timber operator land as some farmers were even returning to their plots within the modified taungya area.

Overall, the productive activities taking place within the Nkuntin area distributed benefits far and wide. In addition to increased chainsaw operations and the inclusion of “outside” farmers, market women increasingly went to go to the reserve to buy plantain. The women would either buy it from farmers who had carried plantain out of the reserve themselves or they would go to their plot and hire people to carry the produce to town. While plantain was the main crop being produced and sold, some women also bought the corn that some farmers were growing. Some of these women were coming to the reserve one or two times a week to supply their retail business (e.g. selling at a town market, cooking food on the roadside). Others had become wholesalers traveling from reserve to reserve throughout the week to supply markets in the area. This buying and selling of foodstuff, when combined with the other activities taking place within private investment conversion areas, can be viewed as more beneficial for the nation as a whole than community-based modified taungya because many more forest-related resources are being brought to market. For example, food security and the demand for domestic firewood and lumber are being better met considering the sheer scale of activity taking place. On the other hand, these benefits are being diffused out as farmers increasingly become marginalized.

Conclusion

Private plantation development has gained momentum over community-based modified taungya as it is seen as a more efficient way of reforesting Ghana's rapidly degrading reserves considering the ability to infuse large amounts of capital. And while focus has shifted from community-based to private-based establishment, poverty alleviation has remained a central goal because investors would need additional labor to establish plantations. In the Jimira Reserve, however, rubs and slippages emerged between the intent and structure of the program, the incorporation of timber operators as private investors, and the transition from modified taungya to private investment. As with modified taungya, the program has erected a structure of opportunities for forest users to negotiate access to the various benefits that can be derived from working within this resource rich arena, albeit with vastly different outcomes for livelihoods, forest cover, and sustainability.

Regarding forest cover, the incorporation of timber operators as the primary investors within the reserve provided them with an inroads to harvest standing timber – a resource that is increasingly in short supply. This access, which originally included relatively degraded areas with relatively few standing trees, spread to include areas of the reserve that were not considered degraded. While disconcerting, this is not a shocking revelation considering the well-established political clout timber operators have amassed over the years. In short, corruption is well documented and “phone calls were made.” Much more interesting is how some of the policies and procedures that were set up to implement private investment, and the

assumptions underpinning them, may have helped to both mask their interest in participation as well as *facilitate* their ability to benefit from it.

First of all, the reforestation plans that timber operators provide help to provide *legitimacy* for the large-scale allocation of land due to the “degraded” nature of the areas they are proposing and the demonstrated financial ability of these operators to establish plantations within these areas. In addition, the plantation department largely focuses on the management of plantations (i.e. planting and post-planting) while relying on RMSC to verify the degraded state of the proposed area. The fact that they rarely did so, and operators were allocated land nonetheless, made it as if the trees standing prior to establishment were made invisible.

As highlighted by the works of Fairhead and Leach (1996, 1998) and Kojo Amanor (1999), narratives are powerful conduits for naturalizing particular views, interventions, and arrangements. By tapping into crises narratives of “degradation” within the areas that were being proposed, along with documenting their ability to reforest these areas, operators were able to establish a “sound plan” of management while harvesting large tracts of timber under the radar considering the trees did not effectively exist in the first place. Interestingly, newspaper coverage of the program heavily focuses on the need to reforest degraded areas of reserve by investing in plantation development. Just as the presence of “degradation” helps to naturalize the need for operators to establish plantations, these accounts paint a picture of *individual* investors establishing *plantations* on *degraded* landscapes. Out of view are the multiple forest users, activities, and conditions of the reserves where these programs are being implemented.

Within the east side of the reserve it did not take long for chainsaw operators to start cutting trees within the reserve once the timber operators harvested the one they were interested in taking to mill. Because the timber operators created two-track paths in the process of cutting and hailing trees out of the reserve, the chainsaw operators had fairly easy access to cut and haul the trees as well. By the time farmers started working the landscape, chainsaw operators also started to hire out their services to farmers who were preparing their plots. The arrangement of individuals hiring chainsaw operators to aid in land preparation differed from the community-based land preparation arrangements under modified taungya arrangement. While some farmers preferred this new arrangement, others complained of the added cost. In particular, some women did not like the fact that they lacked the physical ability to clear even the smallest of trees. They preferred the communal arrangement of cooking for the men, who would fell small trees, while pooling money to hire chainsaw operators to fell the larger trees.

While there was no consensus among the farmers interviewed as to whether community or individual based land preparation was preferable, there was much more agreement on the negative effects regarding the presence of chainsaw operators. Indeed, many operators started “stealing” trees that the farmers had felled. Often times, the operators would come in the middle of the night to take the trees. This caused friction between the farmers and the operators, especially considering many of the farmers had paid to have the trees felled. In short, the farmers considered the trees their property and viewed the taking of them without their consent as stealing. In response, some farmers searched the particular offending operator out, confronted them, and made them pay for the trees they had taken.

Although friction emerged between farmers and the chainsaw operators, the discontent many farmers experienced started with Kwame's practice of allocating plots to farmers. Unlike during the time of modified taungya, farmers were charged a fee for their plot. In some cases, farmers were even refused a spot. And while Kwame initially planted trees on their plots, as was part of the arrangement, he stopped doing so once the timber operators started to fail on their payments to him. He did, however, put pressure on farmers to plant trees or run the risk having their food crops cut down.

To continue their farming activities some farmers went into the reserve to procure cedrela seedling to plant on their plots. Others did not. Those who did plant trees often times did so sporadically and many of them neglected the trees they did plant. As they saw it, it was Kwame's job to do. They did, however, make some attempt because they wanted to retain their access to farm the forest – a livelihood strategy that still held benefits even if the circumstances were not ideal. What this amounts to, however, is a potential for timber operators to receive the full benefits that might be derived from the future felling of these trees – if benefit-sharing agreements ever materialize – through the labor and capital inputs of farmers.

Whether or not benefit-sharing agreements will ever materialize is uncertain. What is certain is the resistance of farmers to cooperate would diminish the full monetary potential that operators could receive if the farmers planted more trees. In addition, the ability of some farmers to ever benefit from a share of the revenue generated from the trees they planted during community-based taungya – again, if benefit-sharing agreements ever materialize – is diminished because they returned to farm their original plots. Within both scenarios the potential to establish a closed-cover canopy is greatly diminished.

Chapter 7: Conclusion

Forestry management within West Africa is increasingly being shifted away from centralized state-based management to include community-based participation as a way to promote equitable and sustainable forestry management. There have, however, been many challenges along the way as governments are often times reluctant to cede control, local and non-local elites often times capture resources at the expense of marginalized actors, and programs often times fail to garner community buy in. In contributing to debates surrounding these issues, this dissertation highlights how private-based forestry initiatives can threaten equitable and sustainable arrangements that have been negotiated through similar community-based initiatives. This argument is based on an ethnographic account of the shifting patterns in access, control, and use of forest resources that accompanied the transition to liberalized plantation development within Ghana's Jimira Reserve and the consequences the resulting changes had on livelihoods and forest cover.

When I began my fieldwork within the Jimira Forest Reserve my aim was to explore whether or not modified taungya was expanding livelihood strategies for farmers, improving livelihoods, and increasing forest cover through newly introduced incentives aimed at getting farmers to invest in timber production. What I encountered was unanticipated, surprising, and complex. Prior to the mid-2000s the Jimira Reserve had four management classifications – production, protection, convalescent, and conversion. In the span of a few short years nearly the whole of the reserve had been converted to plantation development via two plantation

development programs. Land was being bought and sold, raising the question of who actually “owned” the land. Very few forestry personnel were present, raising the question of their ostensible control over the landscape. Many land-use practices were taking place, putting plantation development as *the* incentive driving land use in an untenable position. Clearly, plantation development differed in concept and practice. Most interestingly, I would learn that the practice of taungya was an integral part of the many different land use practices taking place within the reserve as well as the benefit flows that emerged from these activities.

A central line of investigation guiding the dissertation has been the exploration of the transition from state-based centralized management to liberalized plantation development within the Jimira Forest Reserve and how livelihoods and forest cover were impacted in the process. One of the most significant findings from the study involves the very different forest management arrangements and outcomes that emerged between modified taungya and private investment. Structurally, each program embodied similar mechanisms, such as benefit-sharing and land lease agreements, to foster equitable and sustainable forestry management. Yet, Wardell and Lund (2006) point out how laws, regulations, and policies do not determine resource access and use as such, but erect a structure of opportunities for negotiation. The implementation of new programs and policies within a previously closed arena provided a fertile space for forest users to negotiate how management arrangements would unfold.

In theory, the structure of the modified taungya program will achieve sustainable forestry management by bringing the forestry commission, chiefs, farmers, and communities together to collaboratively pursue plantation development. On the ground, the implementation of modified taungya within the Nkuntin area of the Jimira Reserve opened the doors for

farmers, chainsaw operators, and market women to tap previously unavailable/hard to get resources (e.g. fertile soil, standing timber, large bunches of plantain). Within the mix of activities taking place, taungya provided a conduit for chainsaw operators and market women to harness major benefits from cut down trees and food stuff produced. In addition, these activities provided a path for many farmers to benefit from selling trees to chainsaw operators while also having an easily assessable market to sell their food stuff. The most important benefit to farmers, however, came from having equitable access to farm free fertile soil. In farming the forest, the poorest of farmers were able to relieve production and consumption related pressures while better off farmers were able to become upwardly mobile.

Regarding improved forest cover, the fact that Nkuntin farmers were planting trees within areas classified as convalescence and conversion indicates that reforestation was taking place. Helping matters was the fact that the forestry personnel provided seedlings in a timely manner. This increases tree survival rates by allowing seedlings to take root before the dry season. This study did not, however, flesh out the influence of benefit-sharing incentives in getting farmers to plant trees. The farmers simply did not know such incentives existed. They treated tree planting as being the domain of national interests so there is good reason to believe that they would not plant trees if left to their own interests. However, forestry personnel were able to apply pressure on farmers to plant trees by being the gatekeepers in allocating land to farm.

In theory, the structure of the private investment program will achieve sustainable forestry management by bringing the forestry commission, chiefs, communities, and private investors together to collaboratively pursue plantation development. On the ground, the

implementation of private investment within the reserve opened the doors for timber operators, farmers, chainsaw operators, and market women to tap previously unavailable/hard to get resources (e.g. fertile soil, standing timber, large bunches of plantain). Again, taungya played a central role in all of the activities that were taking place. Yet, the reconfiguration of power dynamics that accompanied the transition from modified taungya to private investment put farmers in a much more vulnerable position. In particular, access to land was not as secure with a timber operator appointed middle-man as the gatekeeper for receiving land. On top of this, non-local chainsaw operators started operating within the reserve. The farmers were not able to negotiate with these unknown chainsaw operators as well. Non-local farmers were operating within the reserve as well. I did not investigate the potential negative impact this was having on local small-scale farmers, but it would be a worthwhile investigation for future research.

Even with the shift in power dynamics, many small-scale farmers were still benefitting from having access to fertile land to farm. Not all farmers were able to procure plots from the middle-man, however. As for the farmers who were provided plots, the continuation of practicing taungya was accompanied with increased entry costs. Particularly hard hit were women who had to hire chainsaw operators to clear standing trees. Adding to the unequal relations that were emerged, farmers will not benefit from the trees they have planted if benefit-sharing materializes for private investors. Interestingly enough, the problem of farmers not benefitting from the trees they plant was supposed to be overcome through the reintroduction of taungya. This development, in effect, recapitulates the dynamics of the relations that existed between farmers and the FD within the old model of taungya. This time,

however, timber operators are on the receiving end of the flow of benefits, even if inadvertently. Granted, the major incentive for timber operators to establish plantations was to harvest valuable standing timber. Future revenue from trees that farmers have planted would certainly be welcome though.

By 2008, nearly the whole of the Jimira reserve had been allocated to private investors to establish plantations. With it, there has been significant deforestation (figures 16 and 17 show area and extent of deforestation). In a way, this is not surprising considering the wide spread corruption surrounding the management of timber. More surprisingly, however, is the indirect role that taungya has played within the process. Indeed, the continued farmer demand to practice their taungya-based activities provided an easily exploitable workforce for timber operators to fulfill their obligation of establishing plantations. In addition, well-crafted reforestation plans highlighting “degradation” within the areas timber operators were proposing to establish plantations added legitimacy to their actions. Put together, these factors provided a conduit for these operators to harvest valuable timber in degraded as well as “productive” and “protected” areas of the reserve.

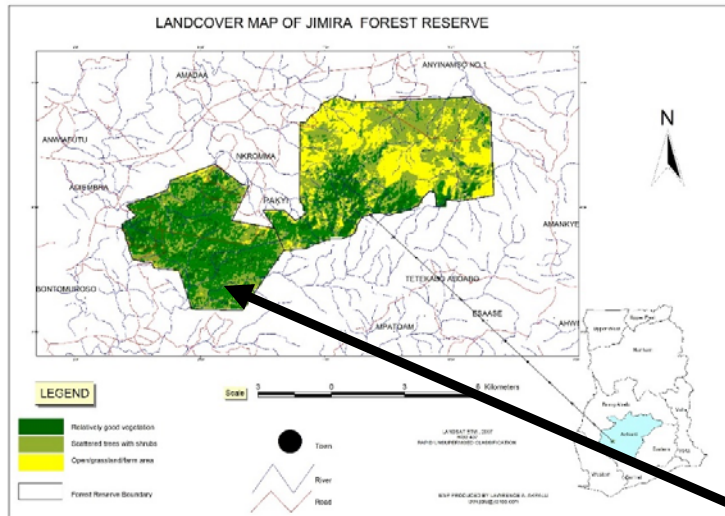


FIGURE 16: LANDCOVER MAP OF JIMIRA RESERVE (CIRCA 2007) (AKPALU 2008). THE ARROWED LINE PINPOINTS THE AREA HIGHLIGHTED WITHIN FIGURE 17.



FIGURE 17: SATELLITE IMAGES OF THE WESTERN PORTION OF THE JIMIRA FOREST RESERVE (GOOGLE EARTH 2015).

Regarding the potential to turn around the deforestation that has taken place within the Jimira Reserve through plantation development, only time will tell. Unfortunately, present indicators are not too promising. This study shows how a tremendous amount of antagonism, a feature that has historically plagued the practice of taungya, emerged between farmers and middle-men/timber operators which led to the resistance of farmers to plant trees. In addition, unlike the relatively small areas of land that were allocated for modified taungya, large tracts of land have been cleared for private investment. What happens when trees do not get planted? Even if farmers were vigorously planting trees, what happens when more land is being cleared than available labor to practice taungya? Different ecological processes will have room to take root (e.g. growth in grass and York³⁴). Considering the deforestation and reforestation processes that have been put in motion, the reserve may very well be degraded for a long time to come.

A second line of investigation the dissertation explores is the relationship between increased access and control over the production of timber and investments in trees planting. As German et al. (2010) point out, academics and practitioners have perhaps over theorized a positive linkage between devolving power and sustainable natural resource management based on an assumed causal link between increased local ownership and control over forests and an incentive to invest in sustained returns. In Ghana, a major focus of sustainable forestry management has been on getting farmers to value timber-based tree species and invest within their production. Yet, Kojo Amanor (2003) points out how a major contributing factor to the

³⁴ York (*Broussonetia papyrifera*) is an invasive tree species.

failure to get farmers to value trees has been the fact that the management of trees, and the benefits that flow from their management, is disembedded from the interests and needs of those who tend them – farmers. Underpinning this disconnect are historical and contemporary tenure-based arrangements, as evidenced through SRAs, that actually provide a disincentive to invest in sustainable management.

In theory, with modified taungya “innovative” benefit-sharing agreements that provide farmers with a share of ownership in the trees they plant will provide enough of an incentive to get them to plant trees. Whether benefit sharing agreements do or do not provide an adequate incentive to get farmers to plant and maintain trees ended up being beyond the reach of this study. The farmers within my research area simply did not know that such agreements existed. They did, however, have an incentive to plant trees in order to get access to additional fertile farmland. Herein lies a conceptual twist regarding the relationship between increased access and incentives to invest. Should the focus of the modified taungya program be on planted trees or food production? This exposes the dynamic nature of incentive structures. Granted, the production of food crops has not been overlooked within the modified taungya program. There was even a debate at the launch of the program as to whether trees or crops should be highlighted. Yet, planted trees won out as the focus at the media event. This leads me to wonder whether the benefits of planting trees is the best focus. There is good reason for farmers to doubt the strength and integrity of benefit sharing agreements to end up delivering benefits. Farming free fertile land is aligned with farmer interests while providing farmers with a more secure assurance that they will actually benefit.

With timber operator led private investment within the Jimira Reserve the incentive structure enmeshed within the practice of taungya became even more dynamic. The ability to farm fertile farmland remained as an incentive for farmers to continue practicing taungya for timber operators. Timber operators then piggybacked on this incentive and got farmers to plant trees for them, capturing their labor in the process. This, in turn, helped to provide timber operators with an inroads to tap their interests in harvesting standing trees because they were more easily able to fulfill their obligation of planting trees. The management arrangements that were established between farmers, middle-men, and timber operators led to farmer resistance to plant trees and an incentive for farmers to go back and farm their modified taungya plots; clearing trees in the process. Within this new mix, however, the FC lacked the ability to provide effective oversight of forestry management within the Jimira Reserve. This leads me to the next line of investigation that this dissertation explores:

This study has considered the role of the state in shaping forestry management and the impacts this has on equitable and sustainable forestry management. The hegemonic position of the state in shaping forestry management outcomes is a major theme within the literature on liberalized forestry management. There is good reason to focus on the power of the state within management arrangements. In Ghana, for example, the FC has resisted decentralizing and devolving its powers within the context of liberalized reforms. Yet, we must also consider how liberalization is weakening the power of the state to manage forest resources and the impacts this is having on the ground. With liberalization the role of the state has changed in both concept and practice as the FD, which was organized to centrally control forestry management, was replaced in the 1990s by the business oriented FC. Regarding plantation

development, this new model has put the FC within the position of straddling the role of stakeholder as well as the overall overseer of management operations. Within the management mix, benefit-sharing agreements situated farmers and private investor as the engines of plantation development. In short, these actors were put in a position to play a major role within the management of reserves that are still ostensibly controlled by the FC.

Within the Jimira Reserve, by 2008 the capacity of the plantation department to oversee operations within the reserve was getting overwhelmed as cutbacks in personnel and other resources coincided with large scale plantation development within the reserve. When modified taungya was introduced within the easternmost part of the reserve forestry personnel played a relatively large role within the program, but this presence diminished over time as funds dried up. This led to farmers having a tremendous amount of control over management decisions. They did not have total control, however. The plantations department still controlled the allocation of land to be converted to plantation development. Even so, compared to initiatives like CFCs where community “participation” was a facade, farmers were in a position to actively participate.

When I started my research at the beginning of 2008 there was one small patch of land in the northeastern part of the reserve that had not been converted to plantation development (see figure 18). Within a few short years the majority of the Jimira Reserve had been converted to private plantation development regardless of compartment classification (i.e. production, protected, convalescent, conversion). “Phone calls” were made. Detailed reforestation plans were written up. Standing timber was harvested. Farmers were recruited to continue practicing their taungya-based activities. Many people I spoke with in the FC started questioned whether

it was wise to have timber operators practice plantation development within reserves in the first place. In their opinion, timber operators were simply interested in harvesting standing timber while putting up a façade of having an interest in developing plantations. In order to deal with this scenario a high level forestry official within the national headquarters of the FC told me that there was discussion of revoking allocations from uninterested investors and reallocating them to investors who would perform as promised. Unlike the detailed reforestation plans that were provided to receive allocations, however, there is no protocol for reclaiming allocations. Even if there were mechanisms in place to take land back from underperforming investors, there is reason to believe they would largely be ineffective due to the power and influence timber operators have within forestry management.



FIGURE 18: PATCH OF UNCONVERTED LAND WITHIN THE NORTHEASTERN CORNER OF THE JIMIRA FOREST RESERVE (MYERS 2008).

Within the Jimira Reserve the reverberations of timber operator control penetrated all the way to the community level. In Nkuntin, timber operators recruited a middle-man to organize farmers to plant trees for the timber operators. The management arrangements that got established differed significantly from the management arrangements that were practiced under modified taungya. Most strikingly, a level of stratification between farmers had emerged that did not exist within modified taungya. Modified taungya was organized and headed by two farmers within the community, but they did not exercise any power to deny plots to farmers. Farmers had equal access to receive a plot based on their membership within the community. When it came time to prepare the land for farming community-based labor arrangements were organized. Under the timber operator appointed middleman, farmers had to buy land to farm. Land was individually prepared. Many farmers did not like how the middleman was managing the land, but they did not challenge the power he held as middleman because he worked for the “owners” of the land, the timber operators. Put another way, a breakdown of cohesion within the community was instigated by a conceptual shift away from public/community “ownership” and control of the landscape toward private-based “ownership” and control.

Ostensibly, tenure relations within the Jimira Reserve are embedded within the stool system and overall management and control of forest resources within the reserve rests with the FC; albeit benefit-sharing alters this position to a degree. In practice, ownership and control was increasingly being negotiated among forest users on the ground. This represents a major shift in power and control. This shift can foster improved livelihoods and forest cover, as demonstrated by the relations that emerged through modified taungya. It can also threaten livelihoods and forest cover, as demonstrated by the relations that emerged through private

investment. Based on these finds, it might be prudent to identify when the FC should have more power and control within forestry management. Put another way, the conversation on state-based control within forestry management should be more contextualized and nuanced. The state is simply not a hegemonic force in all instances.

APPENDIX

1994 Forest and Wildlife Act

1.0 PREAMBLE

1.1 Ghana has been richly endowed with natural resources which are vital for the country's development and future prosperity. Timber from the tropical high forests has traditionally ranked third as a foreign exchange earner, while fuel wood, bush meat, medicinal plants and other natural products have continued to contribute significantly to the welfare of most Ghanaians. Unfortunately, previous exploitation of these resources to satisfy Socio-economic needs has resulted in deforestation and destruction of wildlife habits, as well as resource depletion and degradation. This has been due to the ever-increasing pressure from rapid population growth, leading to clearing of forests for farming, illicit logging and surface mining, uncontrolled bush fires, collection of fuel wood and excessive hunting and poaching of wild animals.

1.2 The country recognizes the interdependency of forests and wildlife and the need to take appropriate measures to optimize resource utilization, to ensure future supplies of wood and non-wood products and to manage national forest and wildlife resources so as to maintain the ecological balance and the diversity of the natural environment. Therefore, as a major step towards balancing these competing demands on the limited natural resources, this Forest and Wildlife Policy has been developed to outline the principles, aims and objectives which will guide the sustainable development of both sectors. It includes a review of past and present policies in the light of new perceptions and sets out a comprehensive list of immediate strategies to be employed towards optional achievement of the stated policy objectives.

2.0 BACKGROUND

2.1 The history of forestry in Ghana dates back to 1906 when legislation was enacted to control the felling of commercial tree species, followed by creation of the Forestry Department in 1908. The demarcation and reservation of the forest estate was largely completed by 1939 and a Forest Policy was adopted in 1948. The policy provided for creation of a permanent forest estate for the welfare of people, protection of water supplies, maintenance of favorable conditions for agricultural crops, as well as public education and research. However, it mainly emphasized the sustained supply of timber for the wood industry and promoted the exploitation and eventual demise of unreserved forests.

2.2 Since the adoption of the forest policy, the wood industry grew steadily up to the 1970s, but like other sectors of the economy, it declined drastically until the introduction of the Economic Recovery Programme in 1983. About that time, the country suffered from the severe effects of a prolonged drought, followed by devastating wild fires, which forcibly awakened the entire population to the environmental consequences of deforestation. During the past decade, the government attempted to stimulate wood processing and exports through a range of initiatives which, hindered by inadequate institutional capability, yielded varied results.

Wildlife Conservation

2.3 Game and wildlife conservation also commenced in the early years of this century, the Department of Game and wildlife being formed in 1965. Wildlife reserves and conservation Policy was published in 1974. Rooted in the general culture and traditions of the country, this policy recognized the economic importance of wildlife resources to the livelihood of people, the role of protected areas in meeting the demand for bush meat and the importance of engaging local communities in protected areas development. However, certain shortcomings have become evident in particular, the need to obtain the acceptance of local communities directly affected by conservation measures and to modify the emphasis placed on preservation of useful animals. Unfortunately, services in the sub-sector also declined along with the worsened conditions of the national economy.

2.4 Strongly concerned about the need to protect valuable resources against further depletion and environmental degradation, the government initiated a series of donor-assisted projects, culminating in the Forest Resource Management Project and the Forestry Planning Project. These projects have adopted a comprehensive approach towards sectorial development through the strengthen of forest management and relevant institutions, policy reforms, forest inventory, a rural forestry programme and preparation of plans for management of National Parks and protected areas.

International Concern about the Global Environment

2.5 The past decade has witnessed increased attention of the world community to issue of conservation and wise of natural resources, culminating in the 1992 Earth Summit organized by the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil. In an effort to halt the deleterious effects of deforestation, global warming and climatic change, certain European countries have unilaterally moved to restrict importation of tropical timbers. In response, the International Tropical Timber Organization, of which Ghana is an active member, has launched its Target 200, aimed at ensuring that trade in tropical timber will be sourced from sustainably managed forests by the year 2000.

2.6 In the wildlife sector, there has been a shift from the traditions preservation approach in protected area management to the more flexible concept of conservation through sustainable use. The World Conservation Strategy together with the reports of the World Commission on Environment and Development, particularly the Convention on Biological conservation and development are not separate challenges but are inexorably linked and need to be addressed as a complex system of cause and effect. Also, there has been increasing recognition that individual protected area are rarely self-sustaining biological islands but integral components of the bio-physical and social landscape and, if protected area are to be developed sustainably, they should help to meet the basic needs of local people in an equitable way.

3.0 GUIDING PRINCIPLES

3.1 The guiding principles for this policy are based on both national convictions and international guidelines and conventions. From the national standpoint, such principles are embodied in the Constitution of the Fourth Republic, the Environment policies of the new parliament government, the Environmental Action Plan, as well as agreements emanating from existing projects, particularly the Forest Resource Management Project and its various studies. Ghana has also endorsed certain

international principles including those contained in the Guidelines for Tropical Forest Management published by the International Tropical Timber Organization, the Rio Declaration and Forest Principles, the African Convention on Wildlife Conservation, the Convention on International Trade in Endangered Species and others.

3.2 In enunciation this policy concerning the country's forest and wildlife resources, the Government of Ghana recognizes and confirms:

3.2.1 the rights of people to have access to natural resources for maintaining a basic standard of living and their concomitant responsibility to ensure the suitable use of such resources;

3.2.2 the nation's viability is dependent on the wise use of the forest and wildlife resources as part of an integrated land use policy, because of their contribution to the economy in maintaining vital ecology and life-sustaining processes and conserving pools of genetic material that scientific, cultural and educational advancement;

3.2.3 the success of sustainable resource management is directly related to continued political support at the highest levels, as well as provision of strong incentives to encourage responsible use, e.g. long-term concessions, equitable access, appropriate fees;

3.2.4 the need for economic and development incentives to stimulate private enterprise and encourage respect for regulations, thus offsetting real and perceived costs imposed by loss of access or restriction on use;

3.2.5 the importance of national accounting for the costs of resource depletion and impact on the environment;

3.2.6 the need to incorporate traditional methods of resource management in national strategies where appropriate;

3.2.7 the need for support by appropriate legislation in harmony with laws concerning related sectors and for policy revision in the light of changing circumstances and updated information;

3.2.8 a share of financial benefits from resource utilization should be retained to fund the maintenance of resource production capacity and the benefit of local communities;

3.2.9 forest and wildlife fees and taxes are considered as incentives to encourage more rational and less wasteful utilization and should be revised according to market forces, and particularly to increase production of value-added wood products for export;

3.2.10 the timber industry should be transformed from a high volume, low value business to a low volume, high value trade based on sustainable forest management;

3.2.11 the maintenance of economic reforms which recognize the private sector as the engine of growth;

3.2.12 the need to improve the state of the environment;

3.2.13 the importance of appropriate and efficient land use and security of land tenure for sustainable development of forest and wildlife resources;

3.2.14 the need to encourage competitive industries based on local raw materials and to pay close attention to international trade;

3.2.15 the need to develop a decentralized participatory democracy by involving local people in matters concerned with their welfare;

3.2.16 the urgent need for addressing unemployment and supporting the role of women in development.

3.3 In view of the importance of local people in pursuing these principles, the Government proposes to place particular emphasis on the concept of participatory management and protection of forest and wildlife resources and will seek to develop appropriate strategies, modalities and programmes in consultation with relevant agencies, rural communities and individuals.

4.0 POLICY STATEMENT

Aims

4.1 The Forest and Wildlife Policy of Ghana aims at conservation and sustainable development of the nation's forest and wildlife resources for maintenance of environmental quality and perpetual flow of optimum benefits to all segments of society.

Objectives

4.2 Specially, the objectives of this policy are to:

3.2.1 Manage and enhance Ghana's permanent estate of forest and wildlife resource for preservation of vital soil and water resources, conservation of biological diversity and the environment and sustainable production of domestic and commercial produce;

3.2.1 Promote the development of viable and efficient forest-based industries, particularly in secondary and tertiary processing, so as fully utilize timber and other products from forests and wildlife resources and satisfy domestic and international demand for competitively-priced quality products;

3.2.1 Promote public awareness and involvement of rural people in forestry and wildlife conservation so as to maintain life-sustaining systems, preserve scenic areas enhance the potential of recreation, tourism and income-generating opportunities;

3.2.1 Promote research-based and technology-led forestry and wildlife management, utilization and development to ensure resource sustainability, Socio-economic growth and environmental stability;

3.2.1 Develop effective capability at national, regional and district levels for sustainable management of forest and wildlife resources.

5.0 STRATEGIES

5.1 In pursuing each stated policy objective, the government will focus on priority issues by employing the strategies outlined in the following paragraphs. Particular emphasis will be placed on the use of market mechanisms to determine realistic product prices and to stimulate specialization and efficiency in resource utilization. These strategies will be further expanded within the corporate statements and operational plans of respective institutions and ultimately, will be incorporated in a national plan to be

prepared with the involvement of all concerned agencies. During implementation, all strategies will be closely monitored to ensure that the desired results are being achieved.

Permanent Forest and Wildlife Estate

5.2 Existing legislation has established 282 forest reserves and 15 wildlife protected areas which occupy more than 38,000 km or about 16 percent of the country's land area. Outside the gazetted areas, an estimated 4000 km of forests still exist, from which the bulk of timber is now being extracted without adequate control while uncontrolled hunting persists in other unprotected areas. Within forest reserves, some 60,000 hectares of plantations have been established, while private interests and communities are planting trees on an increasing scale around the country. Emphasis will be placed on reforestation initiatives towards restoring a significant proportion of the country's original forest cover.

5.3 In addition to the normal responsibilities and programmes of the resource management institutions, the government will employ the following strategies in pursuit of the stated policy objective:

Reserve Expansion

5.3.1 development of an integrated national land aimed at the suitable use of all natural resources, including particularly the dedication of various land categories with potential for nature protection and production of timber and other products;

Management and Utilization

5.3.2 inclusion of unreserved forests under Forestry Department's management system for regulation of uncontrolled harvesting, expeditious collection of relevant fees and ultimate conformity with criteria for sustainable resource development;

5.3.3 revision of resource management standards and techniques for preparation of detailed prescriptions and plans to guide the sustainable management of forest reserves and wildlife protected areas, as well as unreserved forests;

5.3.4 enforcement of specifications prescribed in resource management plans, utilization contracts and logging manuals to ensure compliance of authorizes users with approved harvesting practices and controls;

5.3.5 award of timber rights on the basis of competitive bidding and periodic audit of forest utilization operations to ensure compliance with forest management specifications and environmental protection standards;

5.3.6 regular review of forest and wildlife fees to reflect the economic value of the resource and to recover optimum revenues for supporting the cost of sustainable resource management and development;

5.3.7 establishment and management of a network of National Parks and protected area categories in order to conserve representative samples of the country's biotic communities;

Rehabilitation and Development

5.3.8 promotion of resource development programmes aimed at reforesting suitable harvested sites, rehabilitating degraded mining areas, afforesting denuded lands, regenerating desired wildlife species and habitats and sustainably developing wildlife potential;

Protection

5.3.9 regulation of utilization and trade in highly valued and endangered species in order to eliminate the threat of extinction, encourage regeneration and ensure future supplies;

5.3.10 encouragement of local community initiative to protect natural resources for traditional, domestic and economic purposes, and support with the reservation of such lands to enable their legal protection, management and sustainable development;

5.3.11 initiation of integrated planning by relevant agencies for joint action prevent and suppress wildfires in fire prone areas, illegal farming and encroachment in protected areas, chemical and solid waste pollution by industrial and domestic activities;

5.3.12 introduction of environmental impact assessment as a prerequisite for resource development and utilization projects, in compliance with approved standards.

Viable Wildlife and Forest-based Industries

5.4 The government will seek to create a climate of confidence among entrepreneurs to foster industrial modernization and innovations necessary for rejuvenation of the trade and to stimulate development of wildlife-based industries. Therefore, the following strategies will be pursued within the framework of a free market economy while maintaining a balance between industrial capacity and sustainability of the resource:

Enabling Environment

5.4.1 deregulation and streamlining of bureaucratic controls on wood export marketing to enable private sector initiatives for maintaining competitive advantages;

5.4.2 enhancement of private sector dialogue to stimulate entrepreneurship, particularly in the timber trade and tourism, and to overcome constraints affecting industrial and commercial development in the sector;

5.4.3 introduction of a competitive procedure for allocation of forest utilization contracts (timber and wildlife concessions) to eliminate unnecessary speculators and to ensure that capable and properly equipped processors and entrepreneurs have access to adequate and sustainable resources;

Incentives and Assistance

5.4.4 Encouragement of value-added process in timber, kiln-drying of lumber, optimum utilization of mill residues and eventual phasing out of exports of unseasoned, rough sawn lumber to maximize income and related benefits;

5.4.5 development of the marketability and utilization of abundant lesser-used timber species to obtain maximum benefit from the sustainably allowable cut;

5.4.6 promotion of investment in feasible projects for commercial wild animal production and forest plantations to ensure sustainable supplies of marketable products;

5.4.7 encouragement of improved milling efficiency and adoption of grading rules to increase productivity and maximize Ghana's competitive advantage;

5.4.8 initiation of specialized training and apprenticeship schemes for wood processing operators and produce graders to improve productivity and quality;

Development of Domestic Markets

5.4.9 promotion and development of a well-structured local market as an essential component of the timber industry in order to satisfy domestic needs and to maximize utilization of harvested timber.

Public Education and Participation

5.5 The government wishes to increase public awareness and people's involvement in conservation of forest and wildlife resources, particularly where they directly affect the livelihood of communities and the stability of the environment. Emphasis will be placed on integrated efforts to reduce the incidence of uncontrolled wildfires and to rationalize the demand and supply of fuelwood to ease the pressure on existing forests. Accordingly, relevant strategies will include:[

Public Education

5.5.1 promotion and implementation of public education programmes to increase awareness and understanding of the role of trees, forest and wildlife and the importance of conservation;

5.5.2 promotion of agroforestry among farmer and cultivators to enhance food and raw material production and environmental protection;

5.5.3 dissemination of research information to update the public on current knowledge regarding resolution of technical problems in growing, management and utilization of timber and wildlife products;

5.5.4 participation in industrial fairs, seminars and trade promotion activities to stimulate added investment and growth in marketing of timber and wildlife products and services;

Public Participation

5.5.5 development of consultative and participatory mechanisms enhance land and tree tenure rights of farmers and ensure access of local people to traditional use of natural products;

5.5.6 promotion of national tree planting programmes as positive community-building actions which generate raw materials and income while improving the quality of the local environment;

5.5.7 initiation and maintenance of dialogue with all interests through a national advisory forum (i.e. the Forestry Commission) and related district conservation committees to ensure active public participation in forestry and wildlife matters;

5.5.8 initiation of continued contact and liaison with the local authorities and communities to pursue integrated development activities related to sustainable resource management.

Relevant Research

5.6 There is a critical need to keep abreast of advances in scientific knowledge and to adapt and disseminate such advances, where appropriate, to improve the nation's ecological management and technological development. Faced with limited resources, greater emphasis will be placed on research activities that can be of immediate benefit to users and clients. Therefore, the following strategies will be pursued in the medium-term:

Ecological

5.6.1 promotion of user-oriented instigations into the growth and success of important tree species and forest types, wildlife species and habitats, and the development of appropriate systems for their sustainable management under a wide variety of conditions:

5.6.2 encouragement of studies by institutions of higher learning to increase knowledge of the biological diversity of the country and its potential for future applications in socio-economic development:

Economic Applications

5.6.3 Promotion of client-oriented research into problems and prospects affecting viable processing and marketing of major timber species capable of being managed sustainably:

5.6.4 Promotion of commissioned studies likely to enhance economic returns and sustainability, including aspects such as downstream processing of preferred timber species, utilization of suitable sites and habitats for tourism, hunting and bushmeat production, etc.

Extension

5.6.5 promotion of the development of research database on relevant forestry and wildlife knowledge for effective dissemination to a wide spectrum of users, particularly in industry and rural communities.

Effective Capability

5.7 Government has been investing considerably in the strengthening of sectoral institutions with the assistance of international donors. Already, there are positive signs of improved planning and better coordination within the sector. These capacities building activities will be continued in conjunction with the following strategies:

Institutional Strengthening

5.7.1 reorganization of Forestry and Wildlife Departments, as autonomous or semi-autonomous agencies, to focus on upgrading of staff performance and improved monitoring, coordination and accountability;

5.7.2 initiation of inter-ministerial cooperation and maintenance of an interagency coordinating committee to coordinate plans and programmes and review how policy goals can effectively accomplished, and in particular to develop a long-term master plan to guide implementation of this policy and strategies;

5.7.3 cooperation with international entities, trade associations, private interest groups and non-governmental organizations concerned with sustainable management of forest and wildlife resources in order to benefit from technological advances, technical assistance and action-oriented initiatives;

5.7.4 review of legislative instruments and administrative arrangements to ensure effective resource management and administration towards sustainable development, and in particular to prevent any farming, logging, sand-winning or galamsey activities from taking place along the banks of streams, rivers and lakes;

5.7.5 development of adequate funding arrangements to ensure continuity of resource management services;

5.7.6 development of mechanisms for review and adjustment of this policy as deemed appropriate, from time to time;

Capacity Building

5.7.7 improvement of capacity for accurate accounting and timely collection of resource utilization revenues in order to augment the operational and support finances of respective institutions;

5.7.8 implementation of human resource development programmes aimed at improved planning and management capability in sector institutions, industrial and community enterprises to ensure satisfactory performance and achievement of objectives and targets;

5.7.9 establishment of suitable database systems and information linkages to facilitate decision-making and policy analysis.

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Accra

Date: 24 November 1994

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