WHAT THE STATE DOES, WHY IT DOES IT AND THE CONSEQUENCES:A COMPARATIVE ANALYSIS OF STATE POLICY CHOICES IN THE COCOA, TIMBER AND GOLD MINING SECTORS IN GHANA

by

John David Osae-Kwapong
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Dedication

This is dedicated to my mother, Mrs. Alice Osae-Kwapong, a cocoa farmer, the single mother to whom I owe a lot.

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Abstract

WHAT THE STATE DOES, WHY IT DOES IT AND THE CONSEQUENCES:A COMPARATIVE ANALYSIS OF STATE POLICY CHOICES IN THE COCOA, TIMBER AND GOLD MINING SECTORS IN GHANA

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This study examines the differences in state policy choices used to manage three key export commodities: cocoa, timber, and gold in Ghana. I examine the policy choices along three decision points and question- a) why the state retains no rights to cocoa but retains rights to timber and gold at the point of ownership; b) why cocoa growing, timber harvesting and gold mining are all undertaken by private actors and not a state-owned enterprise at the point of production; and c) why the state uses producer price fixing in the cocoa sector, a guiding selling price mechanism in the timber sector and a fiscal regime of taxes and fees in the gold mining sector as the primary mechanism for extracting rents at the point of sale.

Treating the state as the central actor in society, I draw on interviews, surveys and secondary data to show that the state is motivated by different factors (key and enabling) within and across each of the sectors thereby giving it different levels of control over the

resource sector. I argue that by carefully unpacking the key and enabling factors driving state policy choices in the cocoa, timber and gold mining sectors, it shows when greater state control is more desirable and instances where it is less desirable in managing resources that serve as key export commodities. I further argue that these policy choices and the resulting level of state control has several consequences for both the state and those in society whose everyday lives depend on working in the resource sectors namely cocoa farmers and workers in timber and gold-mining companies. The study has several implications, particularly for how the state is understood within the context of the resource curse discourse.

Chapter 1: Introduction

Policy choices—why particular ones are made and the extent to which they grant states greater or lesser control over their resource endowments, including the consequences—are the subject of this dissertation. I use this study to explain how several factors, such as type of resource, state capacity, dependence on resource for foreign exchange, historical antecedents, land tenure, and revenue maximization, combine in different resource sectors to act as key and or enabling factors shaping state policy choices in those sectors. Previous answers point to politics, state capacity, and alternative sources of revenue as driving forces behind policy choices where resource endowments are concerned (Bates 1981; 2005; Luong and Weinthal 2001; Thurber, Hults and Heller 2010). I do not reject the political motivations of the state neither do I question the importance of state capacity or alternative sources of revenue as drivers of state policy choices. I just question the extent to which the studies I reference elevate the importance of these drivers without addressing other enabling factors working to sustain these choices. As a result, I argue and show in this study that state policy choices are driven not only by certain key sector-specific characteristics but are also sustained by several other enabling factors without which such policies choices are potentially rendered ineffective. It is the combination of these key sector-specific characteristics, combined with other enabling factors that drive the policy choices and the resulting level of control used to

manage resource endowments. Against this backdrop, I measure my dependent variable—policy choices for resource use—along three key dimensions: a) point of ownership (i.e., whether or not the state retains ownership rights to the resource); b) point of production (i.e., whether or not the state organizes a state-owned enterprise for the purpose of extracting the resource from its natural habitat); and c) point of sale (i.e., whether or not the state primarily uses price-fixing mechanisms to extract rents from the resource sector). I study the variations in the dependent variable as they unfold in Ghana, West Africa. Using these dimensions, the policy choices for managing cocoa, timber, and gold in Ghana are displayed in the table below.

Table 1: State Policy Choices in Cocoa, Timber, and Gold in Ghana

Decision Points	Key Question	RESOURCE SECTOR POLICY CHOICES		
		Cocoa	Timber	Gold
Point of Ownership	Does the state retain ownership rights to the resource?	No	Yes	Yes
Point of production	Does the state set up a state-owned enterprise to extract the resource from its natural habitat?	No	No	No
Point of Sale	Does the state use price fixing as the primary mechanism to extract rents from the resource sector?	Yes	Somewhat	No

To summarize, at the point of ownership, the state retains no rights to cocoa. In the timber sector, the state retains ownership rights to timber. However, it holds those rights in trust for the owners of the land on which timber is found. In the gold mining sector, the state retains ownership rights to gold. However, it holds those rights in trust for the people of the republic of Ghana. At the point of production, the state does not set

up a state-owned enterprise to either grow cocoa, harvest timber, or mine gold. Cocoa is grown privately by cocoa farmers. In the timber sector, the state grants concessions to private timber companies to harvest the timber. In the gold mining sector, the state grants mining leases to private mining companies for gold mining. At the point of sale, in the cocoa sector, the state sets a producer price at which cocoa is purchased from cocoa farmers. In the timber sector, the state issues a guiding selling price that must be used by timber companies to negotiate wood export contracts with prospective buyers. Wood export contracts are vetted in order to ensure compliance with the guiding selling price. In the gold mining sector, the state the state uses a combination of taxes and fees. These are the mechanisms used across the three sectors to extract rents at the point of sale.

Some Key Concepts and Definitions

I use a number of concepts and terms throughout the study. When I use the term "state," I borrow and modify the definition of "governance" from the United Nations Development Program whose governance definition is "the exercise of economic, political and administrative authority to manage a country's affairs at all levels. It comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences" (UNDP Governance and Sustainable Development: A Policy Document, 1997). By "the state," I am referring to the central public authority responsible for making economic, political and administrative decisions to manage the affairs of a country. The exercise of this authority involves the making of public policy

and channeling its implementation through various ministries and agencies. In the resource sectors for this study, the key implementing agencies are the Ghana Cocoa Board (for the cocoa sector), the Ghana Forestry Commission (for the timber sector), and the Ghana Minerals Commission (for the gold mining sector). Throughout the dissertation, however, I use the generic term "state" in most of my discussion and analysis, since these agencies and ministries are instruments through which the state achieves policy goals and objectives.

I used the term "state control" (more vs. less) to qualify the degree to which a policy choice gives the state a greater say in the resource sector, compared to other non-state actors. I use the term "decision point" to refer to the key issue(s) that must be addressed in the cocoa, timber, and gold mining sectors. For the purposes of this dissertation, I have identified three key decision points—ownership (whether or not the state retains rights to the resource), production (whether or not the state sets up a state-owned enterprise for production), and sale (whether or not the state uses producer price fixing to extract rents). The point of ownership, especially as it pertains to rights over the resource, is fundamental since it determines access to the resource and shapes all other choices that come with being the owner of the resource. The point of production serves as an important focus because it is the stage at which the resource is transformed into a form that allows the state to extract benefits from the economic value of the resource. This means that if the state engages in the point of production itself or allows private actors to do so, it has implications for whether benefits will be extracted from the economic value of cocoa, timber or gold. Lastly, the point of sale is important because that is where a

price is offered for cocoa, timber and gold. The price the state receives for having these resources goes a long way in determining how much rent it can extract from cocoa, timber and gold. Ultimately, the interest of the state in their resource endowments lies in the economic value and how much revenue can be generated from extracting these resources. The revenue to be generated from the resources is what I refer to in this dissertation as a "rent," and how the state generates that revenue is what I refer to as the "rent-extraction mechanism." In the context of this study the key rent is foreign exchange earnings.

The Importance of Ghana as the Research Setting and Context

The choice of Ghana as the setting for studying how the variation in the dependent variable unfolds is based on a number of reasons. First, Ghana has traditionally relied upon cocoa, timber, and gold as key export commodities from which the state can extract rents, particularly in the form of foreign exchange. Although these three key commodities constitute about 11% of the economy, they provide about 64% of the total exports earnings of the country. In addition, Ghana sits in a region that supply over 70% of the world's cocoa production, with Ghana currently being the second-largest exporter and the third-largest producer of cocoa in the world. In the 2011-12 cocoa season, Ghana supplied 21.5% of the world cocoa output and 30.1% of the total output from Africa (*ICCO Quarterly Bulletin of Cocoa Statistics* 2013). Among cocoa-producing countries it is the only country that continues to use price fixing as the key mechanism for rent extraction from the cocoa sector and has resisted all attempts at full liberalization of its cocoa marketing and export. Neighboring major producing countries

Cameroon, Nigeria, and Ivory Coast all abandoned the marketing board approach to rent extraction in the 1990s, although the Ivory Coast returned to the setting of minimum producer prices in 2011-12 as part of a reform program backed by the International Monetary Fund.

Unlike cocoa and gold, where the bulk of the export is to non-African markets, the majority of timber exports go to other African countries. In 2012, for example, markets in African countries consumed about 55.8% of the total volume of timber produced in Ghana. As a percentage of total earnings from timber exports, markets in African countries accounted for 38.4%. Two non-African markets are worth mentioning. European markets consumed about 20.7% of the total volume of timber produced in Ghana in 2012. Asian/Far East markets consumed about 8% of the total volume of timber produced in that year but accounted for almost 15% of the total value of earnings from timber exports (*Timber Industry Development Division Export Permit Report* 2012). Also, from research and interviews with the Ghana Forestry Commission, the practice of using guiding selling prices as the rent-extraction mechanism from the timber sector is uniquely Ghanaian. Ghana is the second-largest producer of gold in Africa and the tenth-largest gold producer in the world. Of the three sectors under discussion, gold is the sector with the highest participation of foreign investors. Unlike cocoa and timber, where Ghana deviates from other countries in methods for rent extraction, state policy choices in terms of rent extraction, ownerships rights to the mineral, and the use of private enterprises for gold mining are consistent with other gold-producing countries in the region.

Second, as important as these resources are, both domestically and internationally, they interface with a state that is very active but also faces challenges that call its character and capabilities into question every so often. A look at the historical behavior of the Ghanaian state will show a very active state constantly crafting development plans and seeking to use its resource endowments to promote socio-economic development. Appendix A provides a summary of nine key development plans embarked upon since the attainment of independence. During the same period, the state has behaved and continues to behave in ways that have earned it characterizations such as "a vampire state" (Frimpong-Boateng 1992). Scores on various good governance indicators reveal struggles with institutional corruption and call into question the capabilities of the state. In Appendix B, I show Ghana's score on two indicators—government effectiveness and control of corruption between the years 1996-2012 from the World Bank's world governance indicators. Acknowledging the limitations of some of these governance indicators, the scores on the corruption indicator points to a state that struggles to control corruption. The government effectiveness indicator, which measures among other things the quality of policy formulation and implementation as well as the credibility of the government's commitment to such policies, also shows some challenges as well. Yet Ghana is not a failed state in the way Bates (2008) portrays state failure in Africa or in the way Rothberg (2004) depicts what failed states are. This is the kind of state—active but struggling to control corruption and having capacity challenges —that is making policy choices about resource endowments, with potential consequences, good or bad, both domestically and internationally.

Third, in the traditional way of thinking about the resource curse, where the yardstick for measurement is the rate of economic growth, it is difficult to classify Ghana as being resource-cursed. Looking at the growth rate of Ghana, the period from 1960-2012 shows an average annual growth rate of 3.5%. A decade-by-decade analysis shows growth rates as low as 0.5% (1971-1980) but as high as 5.8% (2001-2010). In the 52 years for which economic growth data is available from the World Bank's world development indicators, Ghana has experienced positive economic growth for a total of 44 years, compared to only eight years of negative economic growth. A look at a selected number of development indicators still shows a mixed picture of how well Ghana's resource endowment has contributed to socio-economic development. In Appendix C, performance on indicators such progression from primary school to secondary school and the percentage of population with access to improved water source is commendable. On the other hand, performance on indicators such as percentage of population with access to improved sanitation facilities, life expectancy, and infant mortality rates show poor outcomes. The point here is that the research is situated in a context where there are important resources that have important consequences for growth and development but the picture so far indicates that full utilization of those resources is not occurring. Such a context provides opportunities to probe the choices of policy choices of the state and ascertain the extent to which such policy choices account for the lack of full utilization of its resource endowments. Additionally, it is also the reason why in this study I shift the analysis of the consequences of state policy choices from a macro perspective to a more

micro perspective by looking at how these policy choices affect the everyday lives of those who depend on these resources for a living.

The Dependent Variable Puzzles in the Ghanaian Context

If the policy choices of the state are an indication of the extent of control it exerts over the resources in its territory, then the variation in the choices in dealing with cocoa, timber, and gold presents a few puzzles. In the cocoa sector, the state retains no rights to the resource at the point of ownership, meaning it has less control over decisions relating to what happens to cocoa at that key point of in the resource life cycle. How is it therefore possible for the state to seize control at the point of sale, given its use of producer price fixing as the primary method for extracting rents from the sector?

In the gold mining sector, where the state retains ownership rights to the resource, thereby having greater control over what happens to the resource at that point in its life cycle, why does the state choose a mechanism for rent extraction that gives it less control over the sector at the point of sale? The key with fixing producer prices is that the state typically offers the producer a lower price than is offered on the international commodities market, thereby allowing the state to keep the difference between the two prices. The difference that accrues to the state can be quite substantial if one draws on the experiences of the cocoa sector.

In 2011, timber contributed only 1.3% of the total foreign exchange earnings, compared to 38.5% from gold and 22.5% from cocoa (ISSER 2012, 86-88). Yet the state uses a rent-extraction mechanism in both the timber and cocoa sectors that give it even greater control than in the gold mining sector. Given the contribution from the gold

mining sector, one would expect greater control when it comes to the mechanisms for extracting rents from the sector. Why the policy choices then across these three sectors?

Timber and gold both share a key characteristic: they are both natural resources. The policy choices of the state show similarities only at the point of production—the use of private actors through contracting arrangements for timber harvesting and gold mining. Even though the state retains rights to the resource and holds them in a trustee-trustor relationship, in the timber sector the rights are held in trust for the stools (owners of the land) while in the case of gold the rights are held in trust for the people of the Republic of Ghana. Why are the rights localized in timber, but nationalized in gold?

It is obvious that cocoa, timber, and gold are different in nature. One is a cultivated crop (cocoa), another is a forest product (timber), and the last is a precious mineral (gold). It is therefore normal to expect differences in policy choices at the point of ownership and at the point of sale. However, the state makes the same policy choice at the point of production across all the three sectors—the use of private actors. Why is that?

Study Questions

I pose two questions and try to answer them in this study. The question at the center of this dissertation project is "why does the state choose policies that give it greater control over its resources in some cases but lesser control in other cases?" I pursue this line of inquiry with the goal of understanding the particular resource sector characteristics shaping the state's policy choices. The secondary question that arises from this line of inquiry is "what are the consequences for choosing particular policies at each

of the key decision points in the resource sectors?" I pursue this secondary question with the goal of understanding whether policy choices that give the state greater control as opposed to lesser control make a difference at each of the key decision points in the resource sectors under examination in this dissertation as well as in the everyday lives of those who work in these resource sectors for a living.

Significance of Study Questions. The significance of answering these questions and solving the puzzles presented by the policy choices of the state in the cocoa, timber, and gold mining sectors in Ghana is fourfold.

First, answers to these questions and puzzles have implications for understanding the character of the state. By conducting a comparative analysis of three different resource sectors along three different decision points, I expand understanding of the character of the state in choosing policies to develop resource endowments for national purposes. The literature has tended to look at resource endowment policy choices in a unidimensional way, examining one type of resource, such as minerals, oil, and natural gas, within a single country or in a comparative analysis of multiple countries. The other way the unidimensional approach has been used is looking at policy choices from either the perspective of the extractive process (what I call the point of production) or from the fiscal regime perspective (what I call the point of sale for the extraction of rents). I argue that the character of the state is multidimensional and the consequences of resource policy decisions are a reflection of that multidimensional character. By examining the policy choices both vertically (within a resource sector across multiple dimensions) and horizontally (across resource sectors and across multiple dimensions) the study hopes to

show how unpacking the state deepens understanding of why states make certain policy choices, right or wrong, regarding its resource endowments. The key point here is that, for example, what motivates the state to make a given policy choice at the point of ownership in cocoa may or not be the same at the point of ownership in timber or gold, or at the point of production or sale within the same sector.

Second, while it can be argued that policy choices that give states greater control over resource endowments lead to less optimal outcomes, I strive to show that greater or lesser state control is not necessarily an either/or proposition but rather a matter of understanding the costs and benefits associated with each choice at each decision level. The approach of this dissertation study is to show that whereas using policy choices to gain greater control over cocoa at the point of sale may be beneficial, using policy choices to gain greater control at the point of production in the same sector may prove to be counterproductive. In the same vein, using policy choices to gain control at the point of sale across all three sectors may prove to be beneficial or counterproductive. Ultimately it is important to understand the advantages and disadvantages that come with greater or lesser state control, and finding the most appropriate policy choice in each sector at each of the decision-making points.

Third, in one of the most important studies on the resource curse, Luong and Weinthal (2001) argue that there is a prelude to the resource curse, and in order to understand the resource curse, one must first understand why states choose particular strategies to develop their resources, for that is the stage at which the resource curse, when it happens, is set in motion. The study is based on an examination of oil and natural

gas (Luong and Weinthal 2001). I pick up on this line of inquiry and expand its examination. By doing a comparative analysis of three different resources at three different levels of decision points, I expand the ability to trace the pathology of the resource curse. Adopting such a line of inquiry will help show that for a resource like cocoa, the resource curse or otherwise only sets in at the point of sale, whereas in another resource sector like timber, it originates at the point of production. Knowing where (point of ownership, point of production, point of sale) the resource curse is set in motion helps inform where policy choices must be made in order to turn resource endowments into positive results for a given state.

Fourth, resource curse studies tend to look at the curse at the macro level using highly aggregated indices, especially economic growth rates as measured by gross domestic product (GDP) growth. I argue that the macro level analysis of the curse tends to mask other important and very real ways in which the curse manifests itself. Besides, at the macro level it is challenging to isolate the effects of resources on economic growth from all the other factors that impact economic growth. In addition, cocoa, timber, and gold mining make up roughly only 10% of the economy. I therefore chose to examine the curse at the micro level by demonstrating the extent to which policy choices across the resource sectors impact the living standards of those whose everyday livelihoods depend on work in these sectors: cocoa farmers, timber workers, and gold mine workers. These workers feel firsthand the impact of the state's policy choices, and in very direct ways. For instance, in the last five years Ghana has averaged an economic growth rate of 8.7%, with growth as high as 15% in 2012, using World Bank's world development indicators.

With this level of growth it is easy to conclude that Ghana has escaped the resource curse. However, when we examine the use of producer price fixing to extract rents from the cocoa sector, the lives of cocoa farmers may not reflect the level of macro economic growth experienced. Examining the curse at the micro level is more informative in many ways than a macro level analysis.

Lastly, studies in the area of the resource curse tend to focus typically on minerals, oil and natural gas. This study, however, shows that if the bottom line of these resources is rent extraction then resources such as cocoa and timber provide cases that enrich our understanding of how state policy choices affect the proper utilization of resources and the resulting consequences.

Study Assumptions and Boundaries

I place the state at the center of my study and proceed with three key assumptions. First, I treat the state as the central actor vis-à-vis cocoa farmers, timber companies, and gold-mining companies in Ghana. The centrality of the state flows from my definition of state, which in this context means the entity with political, administrative, and economic authority over cocoa, timber, and gold; it is up to the state to decide how that authority is exercised through its policy choices. Second, I assume that because of the critical role resources such as cocoa, timber, and gold play in national development, the state will prefer policy choices that give it greater control as opposed to lesser control to ensure that it reaps the most benefit from these resources. I do, however, recognize the fact that the state's desire for greater control has to be sensitive to the socio-economic and political environment in which it operates. This means that the state cannot seek greater control by

being oblivious or insensitive to the challenges that other non-state actors in these sectors present. I also assume that that although some actions of the state in the cocoa, timber, and gold mining sectors may seem less than optimal, the policy choices of the state are still calculated choices. The use of the term "policy choices" portrays the state as a rational actor when in reality certain state actions may appear irrational. I accept the rational state characterization in the sense that there is a basis upon which certain policy choices are preferred over others. What the state does is not a given, but rather a matter of calculated choice shaped by internal and external forces. I recognize that the state is not the only actor interested or involved in the cocoa, timber, and gold mining sectors. I also recognize that cocoa farmers, timber companies, and gold-mining companies are not the only non-state actors involved or interested in each of these three resource sectors. For the purposes of this study, however, I am primarily interested in trying to understand the motivations of the state.

Cases

I employ a comparative case-study approach that highlights variation in state policy choices and the extent to which those choices give the state more or less control over its resource endowments. The cases for the study, as depicted in Table 1, are the cocoa sector, timber sector, and gold mining sector. Cocoa growing is widespread in Ghana, timber harvesting is concentrated in a number of regions and gold mining is further concentrated in specific areas of specific regions. Most of the cocoa growing is done on small-holder farms, thus the references to cocoa deal mainly with small-holder cocoa farmers. In the timber sector, this study focuses on the activities of large sawmill

companies that export a large percentage of their products. The gold mining sector comprises both large-scale and small-scale mining operations. All references here to the gold mining sector are, however, to the large-scale mining operations that contribute about 90% of the total gold production in Ghana.

There are important characteristics in the resource sectors worth highlighting here as well. The table below summarizes the key characteristics across the three sectors.

Table 2: Highlighted Characteristics of Cocoa, Timber, and Gold Mining Sectors

	SECTOR		
Attributes	**Cocoa**	**Timber**	**Gold Mining**
Nature of the resource	Cultivated crop	Natural resource	Natural resource
Longevity of resource	Renewable	Renewable	Non-renewable
Geographical distribution	Widely dispersed through a number of regions	Widely dispersed through a number of regions	Heavily concentrated in specific areas in key regions
Production methods	Labor-intensive	Capital-intensive	Capital-intensive
Production time horizon	Short	Short	Long
Points of entry for the state	Single	Multiple	Multiple

The differences can be summarized as follows. On the nature of the resource, cocoa is a cultivated crop, whereas timber and gold are natural resources. In terms of the renewability of the resource, cocoa is a renewable resource. In the case of timber, when reforestation activities are factored in, it can be treated as a renewable resource. Gold, on the other hand, is not a renewable resource. Cocoa and timber are spread throughout the various regions in Ghana. Cocoa is more widely spread than timber. For example, in the Ashanti region alone, cocoa is produced in 15 of the 30 districts, according to the latest district cocoa purchase information obtained from the Ghana Cocoa Board. Timber is produced in seven out of the 30 districts in the region (from the latest stumpage report from the Ghana Forestry Commission). Gold, on the other hand, is a point resource and concentrated in very specific towns in the regions in which it is found. When it comes to production methods, cocoa is very labor-intensive with very little mechanization in the process. Timber and gold production activities, on the other hand, use a combination of capital and labor, with gold being the more capital-intensive of the two. The two sectors rely on heavy machinery, whether it is for felling the trees or for drilling in the gold mines. The time horizons in the production landscape are also different for the three sectors; cocoa and timber have shorter time horizons. For example, if all three sectors wanted to start from scratch, timber would have the shortest time horizon since the trees already exist and one would just have to start harvesting them. New cocoa trees take between two and three years to bear fruit. Gold exploration can take up to ten years before actual mining activities can even start. In the cocoa sector, the state has a single point of entry through the Ghana Cocoa Board. In the timber sector, the state has double

points of entry through the Ministry of Lands and Natural Resources, which is charged mainly with policy formulation and oversight of the forest resource sector, and through the Ghana Forestry Commission, which is charged with regulatory functions. In the gold mining sector, the state has double points of entry through the Ministry of Lands and Natural Resources (for overall oversight of the minerals sub-sector and other policy formulation responsibilities) and the Ghana Minerals Commission (for regulatory purposes).

Data Collection

As part of the study, I took two field trips to Ghana, one in the summer of 2011 and the second in the fall of 2012. On the first field trip, I spent the majority of my time in the capital city of Accra, primarily conducting interviews with current and past state officials with experience in these resource sectors. I also spent time collecting secondary statistics, mainly from the Institute of Statistical, Social and Economic Research at the University of Ghana, Legon and the Ghana Statistical Services. I also visited my mother's cocoa farming village in Agrave, in the Brong Ahafo Region. The travels to the Brong Ahafo Region took me through parts of the Eastern Region and the Ashanti Region. I also visited Takoradi in the Western Region to tour the facilities of one of the major exporters of timber in Ghana. This gave me a first-hand look at point-of-production activities. I also took the opportunity to conduct interviews with three officials of the timber company. I had been to Ghana about four years prior to this field visit and had toured a gold mining company to get a first-hand look at activities at the point of production. Given that all fieldwork was self-financed, I was restricted in terms of what I

could fully explore in Ghana. On my second field trip, I visited Kumasi in the Ashanti Region to conduct interviews with stakeholders in the timber sector particularly to clarify my understanding of state policy choices at the point of sale in terms of the pricing mechanism used to extract rents from the timber sector. I also visited Takoradi in the Western Region, since I had chosen six towns in this region to serve as my case illustration of the consequences of the state's policy choices on the lives of cocoa farmers, timber and gold mining company workers. I spent some time in the capital, Accra, as well, to follow up on other data requests.

I used a number of data collection instruments and sources to gather the needed data for the research study. I designed and conducted a resource sector characteristics survey. This was a paper-and-pencil survey designed to explore the particular sector characteristics of each of the three resource sectors as a way of understanding the state's policy choices. The survey targeted a population I describe in this study as "well-informed persons." In order to access this well-informed population I drew them primarily from those working with the key state institutions responsible for implementing the policy choices of the state in cocoa, timber, and gold. I drew additional informants, with help from ISSER, from well-informed persons not affiliated with the state but well informed about the workings of the sector through work done on behalf of the state agencies, research, or advocacy work. The table below shows the institutions targeted for the survey.

Table 3: Target Institutions for Resource Sector Characteristics Survey

SECTOR	TARGETS
COCOA	Ghana Cocoa Board Cocoa Marketing Company Licensed Buying Companies Produce Buying Company Ministry of Finance and Economic Planning Elected officials, past and present
TIMBER	Ghana Forestry Commission Timber Industry Development Board Ministry of Lands and Natural Resources Ministry of Finance and Economic Planning Elected officials, past and present
GOLD MINING	Minerals Commission Ministry of Lands and Natural Resources Ministry of Finance and Economic Planning Elected officials, past and present Ghana Chamber of Mines

I asked each respondent to indicate their level of agreement, from strongly agree to strongly disagree, on a series of statements about the particular resource sector in which they have considerable experience. For reference to the actual survey, please see Appendices D through F. The statements in their generic form asked about the following for cocoa, timber, and gold:

1. The state's dependence on the resource for national development needs.
2. The contribution of the resource sector to the overall economy.
3. State investment in the resource sector (mainly financial).
4. The ability of the state to rely on the sector state for the long term development needs of the country.

5. The ability of stakeholders to influence state policy in the resource sector.
6. The influence of the international donor community (World Bank, IMF, etc) on policies adopted by the state in the resource sector.
7. The state's capacity to engage in point-of-production activities (growing cocoa, harvesting timber, mining gold, etc.).
8. The state's capacity to engage in point-of-sale activities (marketing and export).

The survey was administered primarily in the capital city of Accra, with additional surveys administered in the eastern region and western region. I lacked the logistical capacity to conduct such a survey across all the key institutions in Ghana. In particular, without the network of deep contacts in the targeted institutions and with limited financial resources because the field trip was self-financed, it was going to be very challenging to get the target number of respondents for the survey. I therefore engaged the services of a local researcher affiliated with the Institute for Statistical, Social and Economic Research (ISSER) at the University of Ghana, Legon to administer the survey of my behalf. ISSER, given the nature of their work, has longstanding relationships with several state institutions, and conducts surveys regularly in Ghana and can thus gain cooperation from targeted respondents. A convenience sampling approach was used to get respondents for the survey. The only specification was that the respondent had to be at least at a managerial level in the target institution. These individuals were identified with the help of the chief director of the target institution. My goal was to have 100 completed surveys per sector, for a total of 300 surveys. At the end of administration by the local researcher, a total of 287 surveys were returned: 99 from the cocoa sector, 98

from the timber sector, and 90 from the gold mining sector. Of the total respondents 65.9% were affiliated with a state agency, compared to 34.1% who were not. I was able to achieve 95% of my targeted number of responses for the survey.

The data collected from this survey was analyzed using basic frequency distributions on each of the questions. I was particularly interested in the percentage of respondents who agreed or strongly agreed with a given statement. I looked at how the statements ranked for each sector in descending order, trying to ascertain how well-informed persons saw what characteristics of the sector are likely to influence state policy choices. I also looked at the data by disaggregating the responses by two characteristics—whether the respondent was affiliated with a state agency or not and how long they (respondents) had been doing work in the resource sector. The resource sector characteristics survey was one of the three key pieces of data I triangulated in order to answer the research questions. The survey results were checked against data collected through interviews as well as secondary statistics and research.

The second survey I conducted was a quality of life survey. This was also a paper-and-pencil survey administered to cocoa farmers and workers in timber and gold-mining companies. The full survey is found in Appendix G. The questions were designed to gauge the social, economic, and political well-being of workers in these three sectors. Given that I was interested in examining the resource curse at the micro level, the survey was intended to gain some insights into the extent to which state policy choices of greater or lesser control made a difference in the material well-being of workers in the resource sectors. The questions asked respondents about basic living conditions such as source of

drinking water, source of energy, and type of sanitation facilities used, among others. There were also questions about existence of facilities to address their social, economic and political needs and institutions such as hospitals, schools, and government offices in their town or district of residence. The questions also asked respondents whether they use such facilities and institutions, how accessible they are to respondents, and how satisfied they are with the facilities. Due to resource limitations, I administered the survey in a very targeted way, in selected towns in the Western Region of Ghana. I chose the Western Region because it has a heavy concentration of all three resources in this study. Respondents were further targeted from particular towns in the region. For the gold mining sector workers, I targeted gold mine workers in two major mining towns, Damang and Tarkwa. For workers in the timber sector, I targeted two towns, Takoradi and Samreboi. The cocoa survey was administered in the towns of Asuahyiam and Yerasi. All of these towns were selected because of the heavy concentration of each of the type of respondents targeted for the survey. In order to gain access to respondents, I engaged the services of a local researcher affiliated with the Institution for Statistical, Social and Economic Research (ISSER) who resides in Takoradi, in the Western Region, to assist with the survey administration. The local researcher put together a team of four survey administrators. Training was provided to the team before the administration of the survey. The local researchers used are college-educated and therefore possessed the level of education needed to administer such a survey. The local researcher and his team provided the trust respondents needed and helped overcome local dialect barriers that I was bound to face in administering the survey myself. My travel to my mother's cocoa village took

me through other cocoa growing villages and towns, so I had first-hand knowledge of the conditions in these areas. In the cocoa towns, respondents were selected randomly. ISSER was preparing to conduct a survey of cocoa farmers and had undertaken a census of cocoa villages and towns. The institute had a listing of all households in these towns. Households were randomly selected from the list, after which the local researcher went door to door to administer the survey to those who had been selected. For the timber and gold mining surveys, respondents were also randomly selected. Since these towns are mining or timber towns, the workers tend to congregate within particular areas in the town. The local researcher randomly picked households and then proceeded to go to these households to administer the surveys. The target was 100 surveys per resource sector for a total of 300 surveys. The local researcher and his team were able to administer successfully a total of 327 surveys. I note that one challenge here is that given the level of education of most of the workers surveyed, local researchers had to translate questions into the local dialect and then translate the response back into English for recording purposes. I recognize that there is a chance of lost meaning on some questions between translations.

At the end of the survey administration, I ran basic frequency distributions on each of the questions. All analysis looked for basic descriptive statistics. I analyzed responses from each sector separately and drew conclusions about each sector before engaging in a comparative analysis. The goal of the analysis was to look across the sectors for patterns of differences and similarities in the quality of life and living standards among cocoa farmers, and workers in timber and gold-mining companies.

Also, I conducted 30 interviews over my two field visits with persons identified as well-informed persons across the cocoa, timber, and gold mining sectors. The structured interviews asked interviewees three questions. Prior to the field visit, based on literature reviews I had come up with an initial classification of the state's policy choices in each of the three sectors at each of the three levels of decision making. The first question I asked respondents was to confirm or reject my characterization of the policy choices. The second question I asked respondents was for key reasons why the state chooses the particular policies that give the state greater control in certain instances and less control in others. Lastly I asked the interviewees what they perceived as the consequences of the state's policy choices. For the interviews, I primarily targeted high-ranking past and present state officials. I was therefore interested in interviewing individuals such as a Minister for Finance and Economic Planning, a Chief Executive of Ghana Cocoa Board, a head of Ghana Forestry Commission, etc. Most of the interviews with officials, past and present, that I ended up conducting were arranged by former high school colleagues, friends, and family who had access to these well-informed persons in the resource sectors. This proved to be very successful because it provided a level of comfort and trust that informants needed. Interviewees were promised confidentiality, which is why throughout the discussion in this dissertation I make references to "the interviewee" or "interviewees." The only interview I secured on my own was with a former state official and was made possible because this official was at a wedding I attended during the field trip. Given the central role of the state in the study, I endeavored to interview mostly past and present state officials who could help me understand as best as possible the

underlying reasons for the state's approach to these three sectors. I also interviewed private sector actors whose work revolves around these resources and have provided them with extensive experience in dealing with the state. These interviews were also arranged by colleagues, friends and family in Ghana. Well-informed persons provided responses in two ways. Some spoke about the state's policy choices across all the three sectors while others spoke exclusively about a particular sector. Before I began any interview, I explained the purpose of my study and sought the consent of the interviewee before proceeding. I used a notebook to take notes of the interviews. No recording devices were used.

The interview data was simply analyzed by categorizing the reasons that interviewees had provided as being the basis for state policy choices across and within the cocoa, timber, and gold mining sectors. In particular, I was very interested in repeated responses across interviewees since that gave an indication and provided a basis for arguing that certain reasons explain the policy choices of the state. I used the second leg of the fieldwork to confirm the repeated responses unearthed during the first leg of the field trip. I also used the second leg of the field trip to conduct additional follow-up interviews to clarify a few issues that had emerged in the preliminary analysis of not only my interview data but the survey and secondary statistics as well.

In addition to the surveys and interviews, I collected various statistics on each of the sectors, such as contribution to GDP, share of export, and total foreign exchange earned, among others. The majority of the statistical information was taken from the publication *The State of The Ghanaian Economy*, a yearly publication of the Institute for

Statistical, Social and Economic Research (ISSER). Additional secondary data was obtained from the Ghana Statistical Services (GSS), Ghana Minerals Commission, Ghana Cocoa Board and the Timber Industry Development Division. The study drew on other data from the World Bank, the Mo Ibrahim Foundation, the International Country Risk Guide and the Country Policy and Institutions Assessment. I also used an archive of news data back to 1995 to see if there were stories that would give me insight into the policy choices of the state or the consequences of the policy choices. I used the news archive of Ghanaweb, a popular web service for news from Ghana. The archive contains news stories from both state-owned and private newspapers. I selected all stories in the archive between 1995 and 2012. A total of 487 news articles were retrieved, out of which 211 dealt with the cocoa sector, 201 dealt with the gold mining sector, and 75 dealt with the timber sector. The small number of articles from the timber sector reflects the economic contribution of the sector in comparison to cocoa and gold mining.

Another important source of secondary data was information from budget documents. The budget statement and economic policy document is presented annually by the Minister of Finance and Economic Planning. The document provides an overview of the economic performance of the country in the previous year, including a sector-by-sector analysis, and the general outlook for the coming fiscal year. In addition, the state presents its economic and policy agenda for the coming fiscal year, including financial investments. I was able to obtain budget statements and economic policy documents from 1998 to 2012, covering a fourteen-year period. The limitation is that these documents only capture the state's policy choices and spending patterns over a limited period of

time. Nonetheless, they provide an opening to get a general sense of some of the strategies that the state uses in the cocoa, timber, and gold mining sectors. I would also like to point out that budget statements and economic policy documents are not the only places where state actions are captured, but it is the one place where the state lays out its vision, thinking, and its policy priorities. In examining the details in the budget statements and economic policy documents, I was interested in any initiatives that specifically showed state actions towards cocoa farmers, timber firms, and gold-mining companies.

Challenges

The use of the case-study approach typically raises questions of the generalizability of the findings. I mediated some of these challenges by using multiple cases, distinct in character from each other, to test general theories about a given phenomenon. Thus, the findings of this study can inform studies interested in looking at state behavior in other resource contexts, whether in Ghana or elsewhere.

The two surveys raise data validity concerns. I mediate some of that by drawing also on interview data and secondary statistics. The data from these sources sometimes contradict each other. In particular, perceptions from the survey data were at variance with data from interviews and or secondary data/statistical information. In such instances of variances I give weight to the interview data and statistical information if both confirm a given finding. Generally the interview data was in agreement with statistical information and other secondary data. There are occasions too where all three sources of data converge. I used my second field trip and follow-up phone calls and online

conversations to clarify and validate some of the preliminary findings of the research with some of the well-informed persons with whom I spoke in Ghana.

I rely on the Quality of Life Survey mainly to ascertain the consequences of the policy choices of the state on the lives of workers in each of the three sectors. Resource limitations prevented several more interviews with workers in these three sectors to supplement the survey data. Additionally, I relied on workers from six areas in a particular region whose quality of life experiences may not be representative of the quality of life experiences of similarly situated workers in the other regions where the resource can be found in Ghana. I, however, use the results of the survey for illustrative purposes, without making claims that it is representative of the experience of all the workers across other regions, although fairly representative of the western region. I am also of the opinion that these consequences will bear some similarities in other regions where the resources are found. In the next chapter, I use all the data collected from all the sources described above to try and provide answers to the central research question of why the state chooses different levels of dominance as it moves within and across three different resource sectors in Ghana: cocoa, timber, and gold mining.

Dissertation Outline

The dissertation proceeds as follows: Chapter 2 examines the theoretical issues around resource endowments and particularly state policy choices concerning these resources. The examination of the theoretical issues in Chapter 2 allows me capture the current state of the debate. I also highlight the key testable hypothesis emanating from the literature that I proceed to examine through the rest of the dissertation study. Chapters 3-

5 examines the state's policy choices and the particular sector characteristics and enabling factors shaping them in each of the resource sectors at the point of ownership, production and sale beginning with the cocoa sector (Chapter 3), followed by the timber sector (Chapter 4), and then the gold mining sector (Chapter 5). I also discuss the consequences of the policy choices for cocoa farmers, and workers in timber and gold-mining companies in each of the respective chapters. In Chapter 6, I summarize the findings from the three sectors in a comparative analysis. I also weigh the utility of previous answers to the line of inquiry in the dissertation and proceed to show some of the insights this dissertation adds to the broader literature around states and resource endowments. I also point out some policy implications and areas for further research.

Chapter 2: States and Resource Endowments

Resource endowments and whether states put such resources to good use continue to be subjects of intense debate. The debate for a period of time centered on showing that states endowed with resources fail to grow economically at a rate comparable to states without such resources. The argument of this line of inquiry is that states endowed with these resources are harmed by the resources. Two responses have emerged to this line of inquiry. The first response dismisses this claim by arguing that resource endowed states are not harmed by such endowments and do not experience negative growth. The second response is conditional in that it acknowledges the potential for states to derive positive benefits from resource endowments if such resources are developed in an environment of quality institutions and guided by sound policy choices. Within the second response, another line of inquiry emerged, although not greatly pursued, that probes for the underlying reasons why states choose particular policies to develop their resource endowments. In this line of inquiry the primary interest lies in the basis of why certain specific policies are chosen by the state. The argument is that understanding why specific policies are chosen by states to develop their resource endowments is the starting point of whether such states will set themselves on a positive or negative trajectory in the development and utilization of their resource endowments. I situate my dissertation in the line of inquiry. The state has a menu of options along several decision points to choose

from and it is worth exploring the particular drivers that propel it to select a given policy option over another.

This chapter proceeds as follows. In order to set the context properly for examining some of the theoretical propositions put forward as to why states choose particular policies to develop their resource endowments, I begin with a twofold discussion—first with an examination of the debate over the importance of resource endowments to states and second with a discussion of whether there is an ideal type state into whose hands resource endowments must be entrusted for policy making. Accepting the line of inquiry within the debate that the importance of resource endowments depends among other things on the pursuit of sound policy choices, and the fact that such policies will be the prerogative of the state, I proceed to examine the menu of options available to the state. I also note the potential drawbacks to each of the policy options. I follow the discussion of the menu of options with an examination of propositions put forward by three studies (Bates 1981; 2005; Luong and Weinthal 2001; Thurber, Hults, and Heller 2011), which serves as the springboard for my line of inquiry in this dissertation. I conclude the chapter by pointing out the limitations of the theoretical propositions put forward by these three studies and how I plan to address those limitations.

The Debate Over The Utility Of Resource Endowments

When the utility of possessing huge resource endowments is considered, three propositions generally emerge. The first proposition asserts that resource endowments yield positive outcomes for societies, usually high rates of economic growth; the second proposition argues that resource endowments yield negative outcomes, such as the

fueling of civil conflicts and the slowing of economic growth. The third proposition argues that resource endowments in and of themselves are not problematic but in order for them to yield positive outcomes for a society, certain mediators are needed—quality institutions, sound policy choices, positive behavior of state officials and a low propensity for conflict among groups in society. In the section that follows, I discuss briefly the first two propositions and highlight the difficulty in the arguments put forward. I then proceed to examine in greater detail the third proposition since it presents the most plausible argument because it recognizes that resources themselves do not yield positive or negative benefits for society, but rather it is how they are developed that determines whether the results will be positive or negative.

Proposition One: Resource Endowments Yield Positive Outcomes. This proposition argues that resources are good since they help promote economic growth and the overall development of a country. Several studies have argued that abundant resources have played a critical role by helping to speed up the economic growth of various countries (Alexeev and Conran 2008; Balassa 1980; Crafts 1998; Ding and Field 2005; Drake 1972; Haber and Menaldo 2011; Higgins 1968; Karabegović 2009; Kronenberg 2004; Lederman, Daniel, and Maloney 2007; Maconachie and Binn 2007; Mehlum, Moene, and Torvik 2006; Mikesell 1997; and Rostow 1961). Why does this school of thought argue that resources yield positive benefits to society? The resources in question—gold, diamonds, oil, cocoa, etc.—are primary commodities in very high demand throughout the world. Even though these resources go through price fluctuations on the world market, the revenue generated from exports puts the state in a position to make the necessary

investments in several areas (such as infrastructure like roads, bridges, schools) as well as provide social and economic benefits like education, healthcare, reliable electricity, and clean drinking water. In states where the tax base is small and a huge informal economy exists, raising revenue through taxation would not allow the state to meet its social and economic obligations to society and it is these resources that become important sources for meeting these obligations. It is therefore difficult to imagine such states without resources such as gold, oil, cocoa or timber to rely on for development purposes.

A notable and important distinction made by some studies in this school of thought is the distinction between resource endowment and resource dependence. Ding and Field (2005) found that resource *endowment* has a positive impact on economic growth, whereas resource *dependence* has a negative impact. The point Ding and Field appear to be making is that extreme dependence on a resource, without alternative ways of raising revenue to finance development, is problematic and can lead to negative economic growth. The oil shocks of the 1970s are a clear example of how states that were extremely dependent on oil faced severe economic challenges because of their resource dependence. This clarity is important because it is hard to imagine a state enjoying positive growth due to only the size of its resource endowment, because endowments themselves do not produce growth; it is the use to which endowments are put that produces growth. Lederman and Maloney (2003) also point out, it is the extent to which these resource form the bulk of a state's exports that has a negative impact on growth.

Proposition Two. This proposition argues that resource endowments do more harm than good to states by pointing to several specific ways in which resources have a negative

impact on states. One of the ways alluded to in this proposition is that when states begin to experience increasing returns particularly in the form of foreign exchange from the export of such resources, it forces a shift away from other viable sectors of the economy like manufacturing to the resource sectors. All investments are made in the resource sectors at the expense of the manufacturing sector leading eventually to the collapse of the latter (Karabegović 2009). This line of argument assumes a number of things. For instance, it assumes that in these resource-rich states there is a very viable manufacturing sector in competition with the resource sector and, therefore, this adverse effect shortchanges the manufacturing sector, which in turn slows economic growth. However, one would be hard-pressed to find a viable manufacturing sector in some of these resource-rich countries, especially those in the developing world, because of their heavy dependence on natural resources.

In addition to the decline in the manufacturing sector as a negative consequence of a state's resource endowment, this school of thought also points to the potential for conflict. Lujala, Gleditsch, and Gilmore (2005) examined the nature of the relationship between diamonds and civil war. In their study, they found a positive relationship between the presence of diamonds in a state and the likelihood of civil war. They argue that the relationship is further complicated if the state in question is divided along ethnic lines. In a conflict over resources in deeply divided societies, the ethnic group that emerges victorious not only seizes control but also is placed in a position to use the resources solely or mostly to the benefit of its ethnic group. Lujala, Gleditsch, and Gilmore distinguish between lootable and non-lootable diamonds, since each provides a

different level of access to rebels in a civil war situation. It is their argument that lootable diamonds, because they are easily accessible due to their location and the low level of technology needed to extract them, result in the intensity and sustainability of civil wars, thereby making the possession of these lootable diamonds not very beneficial to any country. Horsefield (2011) dismisses the notion of resource abundance fuelling conflicts and argues instead that that these conflicts are the result of the dispossession that groups feel as political elites accumulate resources. Horsefield (2011) does not dispute the fact that resources are central to some of the conflict but sees conflict more as an occasional outcome that is not inevitable merely because the country possesses resources. Obi (2010) dismisses the resource-conflict nexus in Africa as well and instead points to class struggles and the complex histories of some of these countries.

Goodman and Worth (2008) examine Australia in depth and point to what they describe as negative consequences associated with the resource boom that the country has experienced from the mining industry. According to them, the negative consequences manifest in three key areas. First, there has been growth in mining but a decline in manufacturing, with a negative impact on the rural sector. Second, the mining sector has come to be dominated by multinational corporations, which have been able to extract valuable tax cuts from the state, especially in the windfall tax. The last way in which the negative consequences manifest themselves is through the environmental impact of mining activities such as pollution.

Other scholars have argued the negative impact of resources on countries. Leite and Weidmann (1999), and Norrbin, Pipatchaipoom, and Bors (2008) also found that

natural resources have a direct negative impact on economic growth. Sachs and Warner (1995), testing for the determinants of economic growth, found a negative relationship between natural resources and per-capita GDP growth. Sala-i-Martin and Subramanian (2003) found that although natural resources are an important determinant of economic growth, their impact on economic growth is negative.

Proposition Three. The third school of thought makes a conditional argument that posits that resources in and of themselves are not what matter most to any given state. Instead, what matters most is the presence or absence of certain key conditions that determine whether the use of these resources yields positive or negative outcomes. The theoretical argument put forward by this school of thought can be summarized as follows: resources in and of themselves are not problematic. However, in order to yield positive benefits for a society, the development of these resources has to be mediated by certain key conditions. If those mediators are of good quality, resources will yield positive benefits; if those mediators are of poor quality, resources will yield negative outcomes. The school of thought identifies the following key mediators or conditions: quality institutions, appropriate behavior among state officials, and policy choices that demonstrate well thought-out options that mitigate any unforeseen circumstances. I will now discuss each of the mediators or conditions in detail.

The Quality of Institutions

"Institutions matter," argues Douglas North (1990) in his examination of institutions, institutional change and economic performance, and they are the reason societies strive to strike the optimal arrangement to produce desirable development

outcomes. North (1990) points out that institutions shape and provide the context for human interaction in an environment of uncertainty. Placed within the context of this study, they serve as the decision-making arrangements that provide the context for interaction between the state and non-state actors in the three resource sectors of interest. Those decision-making arrangements provide certainty to the actors—clear lines of demarcation and assignment of responsibilities as to who does what. As Oakerson (1995) argues, "the purpose of institutions and the intention behind them is never to cripple the process of governance but to discipline it so that it can serve its essential purposes" (1995, 17). Institutions can be complex, especially as they try to anticipate all cases of uncertainty and devise decision-making rules about how various possibilities will be addressed if they occur. Situations of certainty, on the other hand, make the crafting of decision-making arrangements easy. For instance, the state knows for certain when cocoa season opens for purchases from farmers and can easily write rules about how purchases from farmers will proceed. The state cannot anticipate what the prevailing world market price of cocoa will be and so faces the difficult task of writing rules on how price fluctuations will be dealt with, and by whom, once the situation arises. The table below shows some of the commonly identified institutions that this school of thought argues are essential in determining whether resources produce positive or negative outcomes.

Table 4: Examples of Institutions Key to Avoiding Resource Curse

Identified Institutions	Author
Rule of law, protection of property rights, rules for contract repudiation	Boschini (2007)
Effective mechanisms for controlling corruption	Hippolyte (2009)
Regulated competition and secure property rights	Gaddy and Ickes (2007)
Control of corruption, transparency and accountability	Sovacool's (2010)
The rule of law and government effectiveness	Bulte et al. (2005)
Strongly defined property rights, stable and representative political systems rule of law and corruption.	De Haan et al. (2002)
Property rights protection	Gradstein (2003)

Luong and Weinthal (2006), point to economic institutions as being very important if the resource curse is to be avoided. These authors are of the view that well-developed economic institutions may be better equipped to deal with large amounts of revenue from natural resources because they channel these resources into productive ventures rather than using the revenue for corrupt purposes. Weinthal and Luong (2006) argue that institutions such as the rule of law, property rights, an independent judiciary with impartial judges, low taxation, a low level of tariffs and import barriers, and a low level of red tape may be able to ease and in some cases eliminate certain pressures from natural resources. Olsson (2006) examined why diamonds had a negative impact on social and economic progress in Angola and Sierra Leone but a positive impact in Botswana and Namibia from 1990 to 1999, and identified property rights as a key explanatory factor in the differences in the economic performance. According to Olsson (2006), well-defined property rights prevented the elite in Botswana and Namibia from

expropriating rents from the diamond mines. Olarinmoye (2008) points to the ability of state institutions to promote the use of rational and meritocratic criteria in the allocation of public sector resources, as well as accountability, since these are the factors that will determine whether resources will lead to positive or negative outcomes. Barro (1997) finds that economic growth is higher among countries where there is protection of property rights, the rule of law, and less corruption. Van de Walle (2009) found, among other things, that corruption, state performance, and government policies explain the high levels of income inequality found among countries in sub-Saharan Africa. Owen et al. (2009) examined the different paths to growth by putting countries into two distinctive groups—one group that experienced higher growth and a second group that experienced low growth—and showed that one of the key factors that distinguished the two groups is the rule of law.

The highlighted studies above represent only a handful of relevant studies that have examined the importance of the quality of institutions to economic performance in the presence of either rich resource endowments or poor resource endowments. Several other studies have reached conclusions regarding the importance of the quality of institutions (Acemoglu 2004; Andersen and Aslaksen 2008; Dollar and Kraay 2002; Easterly 1993; Kaufmann, Kraay, and Zoido 1999; Mehlum, Moene, and Torvik 2006; Olson, Sarna, and Swamy 2000; White and Anderson 2001; Yi 2004).

To complicate matters for institutional quality are two key societal conditions frequently mentioned in environments of huge resource endowments: political stability and civil conflict between rival society groups over attempts to control the resources.

Engelbert and Ron's (2004) assessment of the political conflicts in Congo Brazzaville point to political stability as the key condition for determining whether mineral deposits will be beneficial to a country or not. The authors show that during the non-democratic era, natural resources did not fuel a civil war and only became a problem during the transition to the democratic era, when the political leadership was weakened. The authors do not advocate for a non-democratic system of government, but through the detailed case study of the contestation for political power once the system was opened up, control over mineral deposits became key to the emerging groups' fight for power. In their argument, having resources, per se, was not detrimental to Congo; it was the ensuing political conditions that resulted in a desire to control resources that fueled the civil conflict. In the final analysis, the interaction between primary commodities and domestic politics thus seems crucial. Political stability matters regardless of whether the state is democratic or not. Another societal factor that can create complications for institutions is fighting between rival groups in highly fractionalized societies (Hodler, 2006). In a fighting environment, property rights are less secure and there is very little incentive to engage in productive activities since those activities are frequently interrupted. Ultimately, if the engagement in productive activities is less than the rents earned from resource exports then the positive effects of those rents are neutralized (Hodler 2006). Problems in Nigeria and Angola but relatively good outcomes in Norway and Botswana are cases that Holder (2006) uses as a frame of reference. Nigeria is a multi-ethnic society that has experienced violence in its oil producing regions. Angola went through a devastating 27 year civil war partly fueled by desire to control rich mineral and petroleum

resources. Other studies have shown the dangers that conflict poses in a state's ability to fully realize the potential of resource endowments (Auty 2004; Ballantine 2003; Collier and Hoeffler 2000; Le Billon 2001; Pearce 2005; Regan 2003; Ross 2002; Ross 2004).

Despite the growing evidence described so far, it is worth noting that the importance of institutions has received its fair share of criticism. Bjorvatn (2012) points to the importance of a government with the capacity to design and implement policies to manage resources. Interestingly, he argues further that even with weak institutions, such a government can manage resource wealth and help a country escape the resource curse. Bjorvatn appears to argue that all that is necessary is a government that can design and implement policies (strong government) even if the environment in which the government does this is characterized by rules and procedures that are not very effective (weak institutions). It is somewhat difficult to imagine a situation of ineffective rules and procedures resulting in efficient outcomes under the scenario argued by Bjorvatn. The critiques of the quality of institutions argument question the elevated importance of institutions in relation to other factors that help explain differences in economic performance across societies (Alesina et al. 1996; Bleaney and Dimico 2010; Carstensen and Gundlach 2006; Glaeser et al. 2004; Holmberg, Rothstein, and Nasiritousi 2009; Presbitero 2006; and Sindzingre 2005).

I have so far examined the first condition within this school of thought, which argues that resources can yield positive or negative outcomes depending on a number of factors—institutional quality being one of them. I now proceed to examine the second

condition that plays a role in determining whether resources will yield positive or negative outcomes for a country: policy choices of the state.

The Importance of Policy Choices

The "policy choices matter" argument examines the extent to which the state anticipates challenges to its resource sectors and devises the appropriate set of public policies to mitigate any foreseen challenges. States that rely heavily on primary commodities for exports know too well the unstable nature of prices for these commodities. Price volatility is rampant, so how a state positions itself to confront such challenges makes the difference between those states that reap positive benefits from their resource endowment and those states that do not. Van der Ploeg and Poelhekkey (2009) examine price volatility issues and point to a state's ability to devise policy choices, such as fewer capital account restrictions, as one mechanism to cope with large and sudden fluctuations in resource income and thus potentially protect them from negative effects on growth as a result of price volatility. El Anshasy (2011) is interested in how states manage oil windfall shocks through their policy choices; Azerki (2010) adds that it is important for states to adopt trade policies that are less restrictive; Birdsall, Pinckney, and Sabot (2000) point to policy choices as they relate to savings and investment; Gerlagh (2004) attributes a positive impact on resource wealth to policy choices such as trade openness and investment; Birdsall and Subramanian (2004) point to revenue management policies; Desai and Pradhan (2005) point to regulatory policies, while Torvik (2009) highlights policies that ensure higher resource-adjusted savings rates. Rodriguez and Sachs (1999) point to the spending policies of the state and whether states have a tendency to

overspend, particularly when revenue yields are very high. Mikesell (1997) explored the reasons for the relatively poor economic performance of mineral-exporting nations and pointed to two important findings. First is that the "differences in the growth performance of the countries are not closely related to differences in economic structure, such as the degree of diversification" and second, that "major determinants of performance include how the government disposes of the windfalls and the policies it adopts to avoid inflation and maintain incentives for investment and production in the tradable sectors" (1997, 197-198). Papyrakis and Yang (2009) examined the influence of institutions versus policies in developing countries and concluded that policies appear to play a significant role in neutralizing the negative impact of resource abundance, while institutions do not seem to have much of an effect. This raises the question of whether bad institutions can actually produce good policies. These scholars acknowledge that in the long run institutions matter but that in the short run it is government policies that make the difference.

The Behavior of State Officials

The behavior of state officials has a significant impact on whether resources and the rents that accrue from them will be put to uses that benefit the society at large. However, there are behaviors that potentially prevent this from happening. One such behavior is corruption, which results in the use of resources to pursue other agendas outside of the development of the entire society. Resource rents either encourage state officials to find ways to stay in power longer (Casseli and Cunningham 2009; Dunning 2005), or to engage in patronage politics, including the misuse of the resources for other

non-development purposes (Duruigbo 2005; Gonzalez-Vicente 2011; Hammond 2011; Leite and Weidmann 1999; Papyrakis and Gerlagh 2004; Pendergast, Clarke, and van Kooten 2011; Pick and Thein 2010; Ross 2001). Many studies have well documented the challenges of corruption in the research context for this study (Agbele 2011; Ayee 2000; Ayitteh 2000; Center for Democratic Development 2004; Gyimah-Boadi 2005; 2010; Mbaku 2000; Osie-Hwedie, B. and Osie-Hwedie, K. 2000; Prempeh 2003; Tankebe 2010; Uneke 2010; Werlin 1972).

I accept the theoretical proposition that resources by themselves do not produce good or bad outcomes—it is the conscious set of decisions that are made about them that leads to either positive or negative outcomes. If the conscious set of decisions via policy is what makes the difference in terms of whether the state will reap positive or negative benefits from resource endowments, I will now to examine the menu of options available to the state.

The Ideal Type State

The key focus of this dissertation is the policy choices of the state. In this dissertation I place the state as the central actor where resource endowments are concerned. I further highlight that state policy choices have to address three key decision points—ownership, which deals with whether the state wants to retain rights to the resource or not; production, which deals with whether the state wants to set up a state-owned enterprise to extract the resource or not; and point of sale, which deals with whether the state wants to use price-fixing mechanisms to extract rent from the resource sector. These points carry

with them four implications that will be addressed in the remaining sections of this chapter.

1. What kind of state will make these policy choices? Is there an ideal prototype state whose policy choices, given the particular characteristics of the resource sector, will lead to positive outcomes as opposed to negative outcomes?
2. At the point of ownership, what is the menu of options opened to the state and how do these options provide ideal policy choices for the state?
3. At the point of production, what is the menu of options opened to the state and how do these options provide ideal policy choices for the state?
4. At the point of sale, what is the menu of options opened to the state and how do these options provide ideal policy choices for the state?

Developmental State versus Non-Developmental States

If any one characteristic is most important to the successful management of resource endowments for positive development outcomes, it is the nature of the state into whose hands these resources are placed. I begin my discussion of the kind of state by drawing on the work of Peter B. Evans (1989, 1995), who provided some of the early conceptual ways of thinking about the variation in state types. He argued that certain kinds of states promote growth and development and are therefore able to achieve industrial transformation. He referred to this type of state as "the developmental state." Evans' central argument was that developmental states have a number of key characteristics that allow them to act in ways that produce positive results for their societies. Developmental states have bureaucracies characterized by merit recruitment

and long-term career rewards, which means that more well-qualified individuals run the bureaucracy and make lifelong commitments to it. Furthermore, given the type of bureaucrats recruited, developmental states build productive relationships with particular social groups, such as industrialists. The state makes critical provisions that create enabling environments for the industrials to make the necessary investments. Since both the state and the industrialists or other productive groups in society end up with shared terms (the state's being the investments that will be made and the non-state actors' being the critical provisions that the state will make) interests are mutually reinforced, with the end result being growth and development. This is what Evans (1995) described as "embedded autonomy."

Routley (2012) summarizes the developmental states literature and provides further conceptualization of what constitutes a developmental state. Besides the conceptualization of Evans, as described above, there are three other key ways to look at the developmental state. The first is the extent to which the political leadership is oriented towards development; the second is whether there is a close relationship between state agencies and industrial capitalist groups in ways that are mutually beneficial; and the third is whether the state makes policy interventions that are successful and promote growth (2012, 8). In addition to these, Routley provides a description of developmental states as "a state that has sufficient state capacity to be effective in its targeted areas and has a developmental vision such that it chooses to use this capacity to work towards economic development" (2012, 8).

Several studies have followed this line of argument in the importance of developmental states. The studies have not been undertaken within the context of managing resource endowments for development purposes but rather within the context of how these types of states promote overall economic development. The point of interest for this dissertation is the features of the developmental state and how those features place states in better positions to manage their resource wealth. The developmental states discourse draws a great deal on the experiences of several East Asian countries that came to be known as the "Asian miracle." As Stiglitz (1996) wrote:

> Governments played an active role in creating market institutions, such as long-term development banks and capital markets to trade bonds and equities, and in establishing an institutional infrastructure that enabled markets to work more effectively. These institutions and markets helped ensure that the high volume of savings was invested efficiently. Governments also used their control of financial markets to help direct resources in ways that stimulated economic growth. This control was probably more important than direct subsidies or low interest rates. Credit was directed not only toward priority areas, but also away from speculative real estate and consumer durables. Policies to improve government-business cooperation enabled governments to design programs that served the needs of the business community, created a favorable business climate, and encouraged business to direct its energies in ways that contributed to high social returns. Sharing information enhanced the quality of decision making. By using, directing, and supplementing markets rather than replacing them, the private sector remained the center of economic activity in most of the East Asian countries; when the private sector disagreed with the government, it was permitted to go ahead and risk its own capital (1996, 173).

The East Asian example of states playing a successful role is further highlighted by Brautigam (1994), who draws on the Taiwanese example and argues the following:

> The country's industrial development depended heavily on strategic interventions by a regime marked by stability, strength (capacity and autonomy), and elite ideological commitment to economic performance. Both by supplying public goods such as agricultural research, paved roads, and electricity, and through purposive intervention in the economy, the Government acted to reduce many of

> the high transaction and production costs common in developing countries (1994, 135).

Dibua (1998), in pointing out the inadequacies of the neoliberal paradigm to deal effectively with the African development crisis, asserts that "it is clear that rather than peripheralize the state as demanded by the neoliberals, a strong state is crucial if meaningful development is to be carried out" (1998, 128). Goldsmith (1999) shows that in Botswana and Mauritius, bureaucracies have played a significant positive role in the high rates of economic growth enjoyed by these two countries. Ram (1996) compares public investment to private investment and shows that public investment is more productive than private investment in a number of instances. Biersteker (1990) questions International Monetary Fund (IMF) and World Bank reforms, particularly as they relate to the reduction of the role of state in economic development. In examining this within the context of sub-Saharan Africa, he argues that reducing the role of the state is counterproductive since there are structural issues accounting for the region's poor economic performance, which demands a role for the state.

Following this line of study have been others also looking mainly at cases from East Asia and on a few occasions drawing on examples from elsewhere in the world. In the course of these studies, the authors have pointed out the key characteristics that make states successful in promoting economic growth and development. Gricie and Drakakis-Smith (1985) draw upon the case of Singapore to show how the state played an important role in moving the country from post-colonial depression to an expanding industrial economy. The state used various government policies such as tax exemptions for key economic activities, greater control of the labor market to mitigate against such things as

strikes, and massive capital investments. Grabowski (1994) uses Japan to show how, through the exercise of long-run infrastructural power, the state in Japan established an agricultural research and extension system that fostered a collaborative state-peasant relationship, with the ultimate result of generating biochemical technology that greatly increased agricultural productivity. Grace and Drakakis-Smith (1985) highlight the successful economic story of Singapore and the critical role the state played in its regulatory function in the areas of land and capital. The authors argue that the central regulatory role of the state enabled it to shape the environment and ensure that it was conducive for development.

Abe (2007) draws on the East Asian countries of Japan, South Korea, Taiwan and Singapore to show how the state made huge capital investments to promote development at a time when local capital was not readily available and the state had to fill a critical gap. The suggestion here is that the state is lender of last resort, such that when all else fails, the state can be relied upon to provide critical services. This must not be construed to mean that any state can play such a role, going back to Evans' (1995) distinction between developmental and non-developmental states. Tabellini (2004) shows how, through the right policy choices, governments are able to enhance economic performance. For example, policy choices that result in a stable macroeconomic environment with low and predictable inflation, a sustainable budget balance, and a stable and competitive currency generate economic success (2004, 7).

Kholi (2009) undertakes a comparative analysis of the era of state intervention and import substitution (1950-1980) to the era of structural adjustment (1990-2005) and

points out that economic growth was faster in the era of state intervention and import substitution. To further illustrate his point, he contrasts the recent economic performance of Latin America and sub-Saharan African regions that embraced and implemented several structural adjustment programs with Asian countries that pursued state intervention, and shows that Asian countries grew faster than their Latin American and sub-Saharan African counterparts. Kholi (2009) highlights how the state used policy tools such as the availability of capital, labor technology, public investment, or public control of banks to direct credit to preferred private companies, all with the goal of promoting economic growth. The danger here is that unless there are strong institutions, the state runs the risk of patronage and cronyism, especially if the state gets into the business of selecting preferred private entities to which it wants to direct capital. Pereira (1993) draws on economic reforms and the different roles that states have played during each of those reform periods in Latin America and Eastern Europe, and argues that a strong sovereign state is essential for, among other things, the resumption of growth. If that premise is accepted, Pereira's (1993) argument is that reforms must seek to restructure the state so as to strengthen it rather than weaken it.

Dadzie (2012) acknowledges the fragility and weak nature of states in sub-Saharan Africa but does not deny that there is a still an economic development role for states in the region to play. Dadzie draws on the success of states from the East Asian countries to further buttress his point, which is that states have a role to play in promoting development. It is interesting to note, though, that calls for a more active state in sub-

Saharan Africa are made with reference to the successful cases in East Asia and not in reference to successful cases in sub-Saharan Africa.

These states mentioned in the discussion have played important roles in the development of their respective countries. Other states will be able to play such positive roles in development if they emulate the characteristics used to describe these developmental states. Additional insights on these positive characteristics are well enumerated in the literature. Besley and Persson (2010) point to the importance of state capacity arguing that when the state exhibits low legal capacity, or creates the conditions for a civil war, or lacks fiscal capacity to generate revenue, the state is rendered ineffective in promoting growth and playing a positive role in economic development. Rodrik (1992) discusses the autonomous state versus the subordinate state where, compared to an autonomous state, a subordinate state systematically under-provides economically desirable interventions, and systematically over-provides politically motivated (and economically harmful) interventions. The subordinate state gets its policies consistently wrong. The result holds even though we have not attached any normative significance to the objective function of the government itself. The autonomy of the state may also vary across issue areas; monetary policy can generally be conducted more autonomously than industrial policy, for example. Tsie (1996) would argue that rolling back the state is inappropriate, but rather, selective and coordinated state intervention is necessary.

Evans and Rich (1999) assert that state bureaucracies characterized by meritocratic, predictable, and rewarding career ladders are associated with high growth

rates. Johnston (1996) discusses agricultural policy in Lesotho, raising questions about the efficacy of state intervention by describing it as being political rather than technical in nature and describing intervention policies as having little effect on the poor in Lesotho. Johnston (1996) indirectly shows that state intervention is only effective when it is overwhelmingly technical in nature, even if there are political underpinnings to those interventions. Huff (1995) draws on the experience of Singapore to highlight the conditions under which states may intervene and achieve positive results, such as enjoying autonomy from special interest groups, a well-trained and disciplined bureaucracy, and recognition of the healthy limits of state intervention. Lefwich (1995) examines growth rates among less developed countries between 1965 and 1990 and argued that those that achieved a growth rate of at least 4% were characterized by states with centralized power, state autonomy, and state capacity to pursue development objectives. Charlton (1991) provides the non-East Asian example of a successful developmental state, as is the case in Botswana. Through careful analysis of the economic growth enjoyed by Botswana, Charlton (1991) shows how Botswana's successful development is state-led, exhibiting three key features: a prominent role played by senior bureaucrats in policy making, the technical ability of the state in policy design, and the ability to plan and implement long-range policy decisions. These characteristics have combined to position Botswana to pursue growth-enhancing policies. More importantly, Botswana is well endowed with diamonds and is one of the countries often described as having escaped the so-called resource curse. Crook (1998) also shows successful growth in the 1980s even as the Ivory Coast implemented IMF and World

Bank policies. Crook's speculation is that the Ivorian state at the time enjoyed strong state capacity and administrative effectiveness, which enabled it to play a positive role in achieving growth.

Placing the arguments advanced by the developmental states discourse in the context of the resource sectors under examination in this dissertation, what will be the ideal type of state into whose hands the policy choices should be placed? For instance, in the cocoa sector, a developmental state will recruit well-qualified bureaucrats to work in the state agency that oversees the cocoa sector. Additionally these bureaucrats will develop productive relationships with cocoa farmers and other stakeholders in the cocoa sector and provide the necessary incentives to ensure growth in the cocoa sector. In the cocoa sector, growth will potentially manifest in increased production, more people participating in cocoa growing, and ultimately more earnings from cocoa exports for the state. In the same vein, the state will adopt policies at each of the key decision points that do not appear to take advantage of cocoa farmers, but rather allow cocoa farmers to continue to be motivated to grow cocoa.

In the timber and gold mining sectors, a developmental state will use its policy choices to attract companies that will make the necessary investments in timber harvesting and gold mining. The state will provide the right set of incentives for these companies and the companies will respond positively. Timber and gold companies will not engage in short-sighted behavior in which they try to avoid and outwit the state. Ultimately, the timber and gold mining sectors will be viable sectors of the economy,

making important contributions and enabling the state to reap the most benefits from its resource endowments.

If developmental states are the states by whose hands resource endowments are better able to be developed, it is important to quickly point out the kind of states into whose hands resource endowments must not be trusted. There are various types of these non-developmental (or what I call "deviant") states that stray from the ideal attributes of the developmental state. Evans (1995) presents us with one type of such a deviant or non-developmental state, which is the predatory state. Predatory states are characterized by corruption of the political class, control of the bureaucracy by a small group of people connected to the state, and the lack of bureaucratic capacity, which together impede development. Bates (2008) points to failed states in which there is a breakdown of political order as a consequence of the choices of state leaders and the way societies respond to those choices. In such a state, citizens stop engaging in productive economic ventures and arm themselves in response to state predation. Rotberg (2004) points to failed and weak states as being unable to deliver the necessary political goods, key among them security. And for Rotberg (2004), without security other political goods such as the adjudication of conflict and social services like education and health cannot be provided. Migdal (1988) describes weak states as being unable to perform a number of tasks, chief among them extracting resources and using these resources appropriately. Another type of the deviant state is the captured state, which Bates (1981) describes as lacking autonomy to take independent action but rather taking actions reflective of the demands or interests of particular groups in society.

What the above-described deviant states have in common is that the state is unable to perform certain key functions in society, thereby resulting in negative consequences for the overall well-being of society. Placing these arguments in the resource context, deviant states will fail to secure these resources or will put them to the kind of use that creates a perverse set of incentives for groups in society. Instead of key productive groups in society responding by making investments in the resource sector, they abandon the sectors or in some cases engage in armed conflict over the resources. Because these states are deviant states, at the key decision points of ownership, production, and sale, policy choices are shaped by narrow self-interest. In the end such states fail to fully utilize their resource endowments.

When the two types of state are juxtaposed, the developmental state prototype is the kind of state into whose hands resource endowments must be entrusted. In the next section, I proceed to examine the menu of options available to the state and point out potential drawbacks to some of those policy options.

Menu of Policy Options

Ownership Choices. Gerhat and Cheren (2013) provide three ownership choices, using the examples of water, gas and oil. They explain the first view of ownership as an issue of "capture," which argues that the rights to subsurface resources are owned by whoever is able to capture them. This view seems to suggest that until capture, such resources are to be treated as a common property resource. This view will not apply to cocoa or timber, two of the resources under examination in this study, since they are not subsurface

resources. Gold, however, is a subsurface resource and therefore raises the issue of the ability to capture it, which then lends to the captor ownership rights of the resource.

The second view espoused argues that whoever owns the surface land owns what is beneath the land. This view again applies to only gold and not cocoa or timber. Iwere (2008) points to the flaw in this theory by arguing that the nature of subsurface resources such as oil and gas and the fluid nature of the resource means that the resource constantly shifts from one area of land to another, which therefore makes it difficult for an individual with ownership rights to the land to claim ownership rights to the resource. The third view, described by Gerhat and Cheren (2013), holds that rights to resources depend on an individual getting to the resource faster than others and extracting for as long as they can. This view seems to suggest a first-come first-serve basis. Iwere (2008) argues that since such resources still are in a physical state to argue that it cannot be owned is not tenable. This third view will apply to timber and gold, which are natural resources, as opposed to cocoa growing on an individual's cocoa farm. Iwere (2008) adds a fourth view—the national ownership theory—which asserts that in order to secure resources and ensure that they are used in a sustainable manner, ownership must be vested in the state, since that is the only way to ensure that the resource will benefit those on whose lands these resources are found and also benefit future generations. This theory again applies to timber and gold, which are natural resources, but would not apply to cocoa, which is not a natural resource but a cultivated agricultural crop.

When all the first three views of ownership theory are examined, one flaw runs across all of them, which is the fact that they create the potential for fierce rivalry over

the resource among groups, rivalry that could have devastating consequences for the resource as well the society at large. Researchers who argue that resource endowments yield negative results point to this potential for disaster (Lujala, Gleditsch, and Gilmore 2005) to support their argument.

The theories also split into two general views: private ownership of the resource vs. public ownership of the resource by some central authority. Tucker (1999) sums up the key arguments for private ownership. In terms of private ownership of resources, the assertion is as follows: "private property provides owners with higher incentives to use resources efficiently and sustainably, because they are able to monopolize many of the benefits of wise management, and they bear most of the costs of poor management (externalities are likely to appear so that owners cannot capture all the benefits, nor be subject to all the costs). Private property holders are expected to have a lower discount rate, so that they tend to place importance on the future value of the resource" (1999, 204). On the other hand, when resources are treated as a common property resource, which I argue gives it a public ownership flavor, Tucker (1999) sum up the proponents' arguments as follows: "Common property presents potential advantages in comparison to private property. If a given resource is mobile (e.g., wild animals and fish) or dispersed and variable (e.g., certain plants), a common property arrangement can provide all users with a larger area in which to seek it and a greater chance of success than if the resource habitat were subdivided into private parcels. Common property may require much lower investments for the users (and even government entities) in the bureaucratic superstructure needed to maintain a private property system" (1999; 205).

The main focus of ownership rights addresses natural resources, which applies to only two of the three resources in this study—timber and gold. Private ownership of natural resources raises questions about excluding citizens from sharing in the benefits of a resource even if individual ownership promises better management of the resource. At the same time, there is no guarantee that the individual ownership will lead to sustainable use of the resource, especially given the economic returns on increased exploitation of the resource. Public ownership, on the other hand, promises shared benefits to all but again there are no assurances that the state will better manage the resource, especially if the state has rent extraction interests. Considering the various implications on the potential for shared benefits, private ownership appears to be more challenging with natural resources like timber and gold and less so with resources such as cocoa, where the resource in question is not a natural resource. To overcome the challenges, then, it is the national ownership route that makes the most sense when it comes to natural resources. The key is how the state shapes the ownership through its policy choices and the extent to which the ownership structure allows participation in sharing the benefits of the resource.

Point-of-production Choices**.** Resources must be transformed from their natural environments into forms that can be sold to generate income for the state. It is only at that point that their economic value to the state can be fully realized. This means that cocoa will have to be grown, timber harvested and gold mined and brought to a form where the state can earn some revenue for it. The question is who will do the growing of the cocoa, the harvesting of the timber, and the mining of the gold? One option open to a resource-endowed society is to have the state set up a state-owned enterprise that takes care of all

point-of-production activities. The other option will be to let private actors undertake the point-of-production activities. Each of the options raises issues and challenges that have consequences for the extraction of the resource phase.

Factors that support the establishment of a state-owned enterprise include the ability to correct market failures, the difficulty of outsourcing to private sectors, the absence of private actors in sufficient numbers as to allow the state to generate revenue from a given activity, and the ability of the state to make investments in areas where the private sector may otherwise not make the investment (Nielsen 1981; Kowalski, P. et al. 2013). As a matter of policy choice the state will be motivated to grow cocoa or harvest timber or mine gold if, for instance, there are not enough private companies willing to make the investment to undertake these activities. Under such a scenario, if the state does not step in these resources will not generate the revenue that the state seeks to generate from these resource endowments.

State-owned enterprises, however, are usually questioned in terms of their ability to undertake whatever tasks they are charged with. In developing countries that have gone through structural adjustments and economic recovery programs, there is always the strong recommendation to have the state divest itself of these enterprises and turn them over to private actors. Boardman (1989) argues that these enterprises are less profitable and are characterized by lower productivity when compared with private companies. Others argue that once state-owned enterprises are privatized, they experience increased profitability as well as high levels of productivity and increased efficiency (Claessens,

Djankov, and Pohl 1997; Boubakri and Cosset 1998, 2002; Dewenter and Malatesta 2001; La Porta and Lopez-de-Silanes 1999; Harper 2002).

In wrestling with the question of what to do at the point of production, the state must contend with issues of efficiency and productivity when deciding to set up a state-owned enterprise. The arguments advanced suggests that state enterprises may not be able to produce these resources at the level at which they can be produced by a private entity. For example, inefficiency may cause state gold-mining companies to fall below the optimal production that an efficient private company may be able to achieve. That reduced production would in term limit the amount of rent the state can extract from gold. The same dynamic applies to the case of cocoa growing or timber harvesting.

But even when the state chooses to engage private actors for the purpose of extracting these resources, there are still issues the state must contend with. Allen et al (1989) argue that the state must contend with issues such as the potential for corruption, the perverse incentive for reducing quality, service interruptions, and reduced access for the disadvantaged. The temptation of corruption arises in the procurement process where, in an environment of weak institutions, private actors may be tempted to offer bribes and gifts to state officials for award of contracts. This is possible in the case of the harvesting of timber or mining of gold where there are entry barriers and the state decides who will have the rights to undertake the point-of-production activities in the event that the state choose to use private actors instead of setting up a state-owned enterprise. When private actors are concerned about a quick return on their investment, those concerns may override their concerns for quality, which presents additional challenges for the state.

Green (2007) highlights an important key disadvantage for states in using private actors, and that has to do with the termination of contracts. Writing within the context of service delivery, Grene argues that when such private actors fail to deliver, the state is sometimes constrained in its ability to choose new actors because of the cost of preparing a new process to seek new actors who will deliver the service for the state. From Grene's assertion, the state is placed in a situation in which it is stuck with poor performing private actors. Ripley (2010) argues that without proper oversight, the use of private actors does not yield what the exercise of such an option promises. The state must be in a position to monitor, and have strong institutions that allow close oversight of the activities of the private actors chosen to, for instance, grow cocoa, harvest timber or mine gold. Without such oversight, the state is left at the mercy of the private actor. When placed within the context of the resource sector, such lack of oversight may mean the state's inability to know actual production figures on which to collect the appropriate amount of rents from the resource.

Whether the use of state-owned enterprises or the use of private actors to undertake the point-of-production activities with regards to cocoa, timber or gold, there are various challenges with which the state must contend, no matter what the policy choice is.

Point-of-sale Choices. States have one key interest in resource endowments—their economic value and how much revenue can be generated from extracting these resources. The revenue to be generated from the resources is what I refer to in this study as a rent. The question confronting the state is, given the resource endowments, which mechanism

offers it the best way to extract rent from the sector? Ruta and Venables (2012) identify four key mechanisms through which the state can extract rent from resources: export taxes, price controls, production quotas, and domestic producer and consumer taxes. Two of these mechanisms (the uses of taxes and the use of price controls) are of interest to this dissertation.

The revenue motive is a key reason states use export taxes as rent-extraction mechanisms. Export taxes can reduce the domestic price, and the resulting price differential between the domestic and international prices accrues to the state in terms of revenue. However, the authors caution that if the state is the producer of the resource, export taxes do not yield net revenue since the tax becomes a tax on the state itself. Additionally, the authors argue that taxes can serve as a disincentive for investment on the part of producers.

Barrett and Mutambatsere (2005), in their discussion of marketing boards, address the issue of price fixing. The use of the producer price provides an advantage for the state because when dealing with an export commodity the state faces no price controls at the selling end, which means that it is in a position to sell at the highest selling price. The use of producer price fixing lowers the price for the producer in that they are always fixed artificially with the difference therefore accruing to the state. In order to use this mechanism the state usually retains the sole legal authority to export the crop. Bates (1981) argues that such mechanisms are inefficient and lead to waste, although they succeed in keeping producer prices low and thus generate surplus for the state. Bates additionally argues that such a mechanism acts as a disincentive for production and has

the potential of forcing producers to move away from the production of the resource in order to avoid the state. Kolavalli et al (2013), writing about the experience of cocoa where price fixing has traditionally been common, assert that price fixing results in inefficiencies as well as increased costs. Increased costs in particular work to constrain the extent to which the state can offer higher prices for the producer, which in this case will be the cocoa farmer. Additionally, the use of revenues generated to cover industry cost is argued to be double taxation, especially if the state levies an export tax on the resource, which happens in the case of cocoa. McIntire and Varangis (1999), in their critique of their assessment of cocoa pricing system in the Ivory Coast, investigate the level at which the state wants to set the price. In their example, producer prices were set too high and upon the introduction of reforms these prices have to be reduced. In using a price-fixing mechanism, then, the state has to ensure it has the ability to price in such a way that it does not discourage investment by the producer but at the same time allows it to earn a sizeable rent in terms of any difference that may accrue between the fixed price and the market price.

If the state does not resort to the use of producer price fixing, the other option opened to the state is the imposition of a fiscal regime on the resource sector. The fiscal regime typically includes various taxes and fees the state levies on the sector as a way of extracting rents. Boadway and Flatters (1993) point to common examples of such taxes and fees as royalties used in non-renewable resources (applies to gold in this study) and stumpage fees used in the area of forestry (applies to timber in this study). Boadway and Flatters describe the use of royalties and stumpage fees as a very simple way to collect

but point to the fact that they are essentially a production tax. On the other hand, because some of these taxes and fees are charged at the point of production, the authors argue that it creates a disincentive for extracting the resource. Additionally, it creates a situation where actors engaged in the extraction of the resource have to decide whether it makes sense to extract the resource, or which part of the resource to extract. Boadway and Flatters argue that resources that may be of value but have high extraction costs will be left alone. In this study, this dynamic is applicable to timber and gold, with the implication that the state's choice of this type of fiscal regime can potentially reduce the incentive to engage in gold mining or timber harvesting. Bluffstone (1997) echoes the point regarding the incentives for production by cautioning that states must factor in what a tax mechanism such as royalties may do to overall production output, particularly when states are considering changes in the rates. Barma (2012) discusses a number of tax instruments as part of a fiscal regime that can be used to extract rents from minerals. Barma also cautions against the disincentive for production as well the potential postponement of the extraction of the high-grade high-quality part of the resource. Additionally, the state must factor in administration costs and the revenue variability that come with particular instruments.

Whether the state chooses a price-fixing mechanism, in the event that it can, or a non-price-fixing mechanism as the way of extracting rents from the resource sectors, there are various challenges the state must contend with. One of the key issues the state must contend with is ensuring that it does not create a disincentive for producers, since

that would have implications for the amount of production and eventually how much can be extracted in rents.

What Motivates the State?

If policy choices matter, and the state has a menu of options in terms of what to do with its resource endowments, the question is what motivates the state? Why does the state make the kinds of policy choices it makes when deciding how to put its resource endowments to use? The resource curse literature is largely silent on this question, as pointed out by Luong and Whitehall (2001). There are, however, three important studies that have attempted to understand the basis of state behavior generally in terms of policy choices. These provide some important insights worth examining and are the springboard for the line of inquiry in this dissertation.

The Bates Proposition. Robert Bates (1981, 2005) argues that state behavior is motivated by the centrality of political considerations and further enhanced by the ease with which certain stakeholders are able to mobilize or not. Bates describes the state as a self-interested actor with a number of clear ambitions—the most important of them being holding on to political power. Using states in sub-Saharan Africa who are dependent on the production and export of primary products (mainly agriculture products such as coffee, cocoa, etc.) for their economic development, Bates (1981, 2005) asserts that the key way of holding on to power is to secure a constant flow of export revenue, not only to promote the states' development agendas but to keep urban elites and workers happy. One of the key methods the state uses to guarantee export revenue from cash crops is the creation of marketing boards. These are state-sanctioned institutions with the sole power

over the export of cash crops. This institutional arrangement allows the state to buy these cash crops inexpensively from rural farmers and sell them to the world market to generate huge surplus revenues. The revenues are then channeled into the kinds of policies that keep urban elites and workers happy. How is the state able to do this? Rural farmers are too dispersed and cannot easily mobilize for collective benefits; therefore, it is easier for the state to shift resources away from them to urban elites and workers who are more concentrated and can easily mobilize for collective benefits. In essence, political considerations and the desire to hold on to power drive the state's rent extraction from agricultural commodities such as cocoa so as to be able to make the kinds of investments that buys the political support of the urban population. This is further enabled by the fact that those from whom the state extracts rents from are unable to mobilize in such ways as to be able to resist such state policy choices. Bates (1981, 2005) focuses on the point of sale, which is the point at which revenue is generated from these resource sectors.

The Luong and Weinthal Proposition. The Luong and Weinthal (2005) argument highlights two key motivations for state behavior: access to alternative export revenue and the level of political contestation. The authors look at oil and gas and argue that the ideal state prefers more control rather than less control over its resources and has various methods of exerting such control, with their first preference being state ownership with indirect international involvement. The other choices are state ownership with direct international involvement, privatization with indirect international involvement, and privatization with direct international development. The political contestation dimension addresses the state's desire to hold on to political power and the extent to which there are

rival groups that threaten this hold on power. In arenas of high political contestation, the state needs all the resources it can mobilize to ward off rival groups through the dispensation of economic patronage. The authors argue that for the state to choose their first preference—state ownership with indirect international involvement—there must be a high degree of alternative sources of export revenue and a low level of political contestation. In such a scenario, the state has enough resources and is under no threat from an alternative political power calling for additional resources. State choices begin to change when, for instance, it has a low degree of alternative export revenue and high political contestation; then the state is forced to engage private actors who can quickly develop these resources for the state to and thus enable the state to ward of political challenges to its rule. The Luong and Weinthal (2001) study primarily looks at the point of production. For Luong and Weinthal, a decision to retain state ownership also means that the state will set up a national company that does the mining or the drilling for the resource. Nonetheless, the authors provide us with two key factors that motivate the state: alternative export revenue and the degree of political contestation. These two factors, in their combination in a given resource context, determine whether the state chooses more or less control.

The Thurber, Hults, and Heller Proposition. Thurber, Hults, and Heller (2011) highlight the importance of state capacity and political competition. The authors closely examine oil sector governance, in which the state is the dominant actor, and question when it is appropriate for the state to exert its dominance, either through single points of access to the resource sector (by combining commercial, regulatory and policy functions) or

through multiple points of actors (by separating these functions.). In a case of high institutional capacity and high political competition, the authors argue that it prevents the monopolization of each of the multiple points of entry into the sector by competing political interests, because the state is effectively in control of each. In a context of low institutional capacity and low political competition, the authors recommend a single point of entry to the resource sector, in which regulatory functions, policy-making and commercial activities are consolidated in a single state institution. In a context of high institutional capacity but low political competition the authors still recommend a single point of entry and consolidation of the three functions until such time that politics becomes competitive, when having multiple points of entry to the sector becomes very important. In a context of low institutional capacity but high political competition, the authors recommend an improvement in the technical capacity of the state first. The importance of this argument to the dissertation is the highlighting of the fact that in policy choices where resources are concerned, the state must factor in its capacity to deliver.

The three studies cited above share one key answer: the role that political competition plays in shaping the state's choices. There are other factors as well, including access to alternative export revenue, state capacity, and mobilization of non-state actors. These studies, however, look at just one dimension of the resource sector, either point of sale, point of ownership, or point of production. They also focus on a single resource sector. This dissertation expands on these studies and conducts a comparative analysis of three different resource sectors on three different dimensions. The study argues that state

behavior in resource sectors and the consequences of such behavior is better understood by unpacking the state and examining its behavior both vertically (within a resource sector across multiple dimensions) and horizontally (across resource sectors and across multiple dimensions). I contend that the factors alluded to by the above propositions alone can not sustain the policy choices of the state and that it will take other enabling factors to sustain these policy choices.

In the next chapter, I examine closely the cocoa sector. I look at state policy choices across ownership, production, and sale and discuss the various sector-specific characteristics that shape those choices. I conclude the chapter with a discussion of the consequences of state policy choices for the well-being of cocoa farmers, which is the secondary question of this dissertation.

Chapter 3: Cocoa—Why the State Does What it Does in the Sector, and the Consequences

In this chapter, I show the key reasons for the different policy choices of the state in managing cocoa along three key dimensions—point of ownership, where the state retains no ownership rights; point of production, where the state does not set up a state enterprise to grow cocoa; and the point of sale, where the state uses a producer price-fixing mechanism for the purposes of rent extraction. I will explain the following regarding the policy choices of the state in the cocoa sector:

1. That at the point of ownership, the nature of the resource enabled by the following sector-specific characteristics—historical antecedents, socio-economic characteristics of cocoa farmers and land tenure system—contribute to shaping the largely private character of cocoa (no retaining of rights to the resource by the state) at the point of ownership.
2. That at the point of production, cocoa's contribution to the economy enabled by the following sector-specific characteristics—state capacity, state investments in the sector and historical antecedents—contribute to shaping the largely private character of cocoa (no state enterprise set up to grow cocoa) at the point of production.
3. That at the point of sale, dependence on the resource sector as a guaranteed source of foreign exchange enabled by the following sector-specific

characteristics—long term reliability of the sector, state capacity and price fluctuations—contributes to shaping the state's policy choice of using producer price fixing as the primary mechanism for extracting rents from the sector.

Cocoa At The Point of Ownership

Policy Choice. At the point of ownership the state retains no ownership rights to cocoa. The ownership rights here refer to the cocoa trees and pods as they are growing on cocoa farms. Cocoa farms are the property of the cocoa farmers and so are the cocoa trees and the fruits they bear on those farms. The point to note is that once the cocoa farmer exchanges the cocoa beans at the point of sale, those beans become the property of the state, which is to be expected because at that point the farmer has sold the beans to the state.

State Actions. At the point of ownership there is very little or no state action. The state action worth mentioning is the seeking of the consent of the cocoa farmer and the offering of compensation when the state has to take certain actions that affect the cocoa farmer. Over the last several years, as the state has embarked on replanting exercises in which diseased or old trees are cut down and replanted, the state has had to appeal to cocoa farmers for their cooperation. Additionally, cocoa farmers are compensated for the trees that are cut and are provided with free cocoa seedlings for replanting. Whether it is spraying the farms, or cutting down old and diseased trees for replanting purpose, the state does not act without the consent of the cocoa farmer.

Key Sector Characteristic. The key sector characteristic driving cocoa sector policies at the point of ownership is the type of resource in question. Cocoa is not a natural resource in the way that timber and gold are natural resources. The latter two—timber and gold—already existed in the natural environment of the research context (Ghana). Cocoa, on the other hand, was brought to Ghana from overseas and is cultivated; thus it is treated more as an agricultural commodity. It is easier to retain state ownership of a natural resource than a cultivated crop whose origins can be credited to private individuals rather than the force of nature.

Enabling Factors. An important enabling factor is the historical antecedents that gave rise to the cocoa sector in Ghana. These historical antecedents and the subsequent trajectory have not been altered because, due to the type of the resource that cocoa is, cocoa has remained largely a primarily privately-owned resource. The Ghana Cocoa Board traces the beginnings of cocoa in Ghana and provides the following historical account:

> The available records indicate that Dutch missionaries planted cocoa in the coastal areas of the then Gold Coast as early as 1815, whilst in 1857 Basel missionaries also planted cocoa at Aburi. However, these did not result in the spread of cocoa cultivation until Tetteh Quarshie, a native of Osu, Accra, who had travelled to Fernando Po and worked there as a blacksmith, returned in 1879 with Amelonado cocoa pods and established a farm at Akwapim Mampong in the Eastern Region. Farmers bought pods from his farm to plant and cultivation spread from the Akwapim area to other parts of the Eastern Region. In 1886, Sir William Bradford Griffith, the Governor, also arranged for cocoa pods to be brought in from Sao Tome, from which seedlings were raised at Aburi Botanical Garden and distributed to farmers (http://www.cocobod.gh/history.php).

This historical trajectory was described during one my field interviews as "it has always been so." The puzzling question was, even though cocoa began the way it did, thus giving rise to the point-of-ownership structure, why it did it remain so? Once the

state recognized the economic value of cocoa after early experimental growing of the crop, it can be argued that the state could have used its powers to change the ownership structure at the primary point of ownership.

Also, the socio-economic characteristics of cocoa farmers are important to note. The farmers who were interested in growing cocoa and acquired material from the experimental farms opted to cultivate the crop on small-holder farms rather than large plantations. The table below shows the farm sizes across five of the cocoa producing regions.

Table 4: Cocoa Farm Sizes and Ownership

Region	Median Farm Size Overall Reported	Median Size of Largest Farm Reported	% of Farmers that Own Their Farm
Ashanti	4	4.7	87
Brong Ahafo	4	6.5	74
Central	3	3.0	71
Eastern	2.5	3	72
Western	3	4	77

Source of Information: Jens Hainmueller, Michael J. Hiscox, Maja Tampe. *Sustainable Development for Cocoa Farmers in Ghana Baseline Survey Preliminary Report.* MIT and Harard, January 2011.

To further aid in this historical trajectory, cocoa has come to play important roles in the socio-economic life of cocoa farmers. First it is an important source of income for cocoa farmers. The table below illustrates the economic importance of cocoa to the lives of farmers. The share of total income represented by cocoa is calculated based on the information obtained from Jens Hainmueller, Michael J. Hiscox, and Maja Tamp's

Sustainable Development for Cocoa Farmers in Ghana Baseline Survey Preliminary Report (2011).

Table 5: Median Annual Income from Cocoa by Region (Ghana Cedis)

Region	Cocoa Income	Income from Other Crops	Total Crop Income	% Share of Total Income from Cocoa
Ashanti	918	53	1122	81.8
Brong Ahafo	1020	100	1290	79.1
Central	663	45	863	76.8
Eastern	570	155	936	60.9
Western	966	20	1114	86.7

Source of Information: Jens Hainmueller, Michael J. Hiscox, Maja Tampe. *Sustainable Development for Cocoa Farmers in Ghana Baseline Survey Preliminary Report.* MIT and Harvard, January 2011.

The importance of cocoa as a source of income cannot be underestimated. As shown in the table above, cocoa represents at the barest minimum 60% of the annual income earned by farmers, and could be as much as 86%. In conjunction with that, it is treated as a family asset that is passed on to subsequent generations so that it can continue to provide a livelihood for families in cocoa producing areas. Attempting to retain ownership would have put the state in the path of having to wrestle with too many things, most important of all being how to address the social and economic displacement that would have occurred in cocoa growing communities if the state had used state powers to undertake such a choice.

Further complicating this is the nature of the land tenure system in Ghana. As Mends and de Meijere (2006) describe from a Ministry of Lands and Forestry report:

> Land ownership in Ghana can broadly be divided into four main categories and these are customary ownership, state ownership, individual ownership and vested ownership involving shared ownership between the government (legal interest held in trust) and the customary landowners (beneficiary interest). Customary lands form about seventy-eight (78) percent of the total land area in Ghana and consist of both stool and family lands. Family lands together with individual lands form about thirty-five (35) percent of the total lands in customary ownership (2006, 6).

Under such a land tenure scenario, the state would have had to also wrestle with issues of a crop that had found its way mostly into areas where the prevailing land ownership model was customary ownership. Another emerging issue, as one thinks through the ownership structure of cocoa, is why the state did not maintain a parallel structure in which it also set up several cocoa farms while allowing the historical trajectory to remain. In the course of interviews I learned that the state owned a number of cocoa farms throughout the cocoa producing regions. However, the state abandoned ownership of these plantations due to poor management issues, according to my field interviews.

A combination of the type of resource that cocoa is coupled with the historical antecedents shaped the largely individual character of cocoa at the point of ownership, where the state retains no ownership rights to the resource. The socio-economic profile of cocoa farmers as well as land tenure challenges plays a role in the policy choice at the point of ownership as well. The result is that any state initiative at the point of ownership is approached by always seeking consensus, permission and consent from the cocoa farmer. In the next section I will discuss cocoa at the point of production.

Cocoa at the Point of Production

Growing Cocoa. Cocoa growing involves several activities, most of which are very labor intensive. The decision points at the point of production are many. The table below outlines those key decision points and the choices involved at each of those decision points, all at the point of production. The activities highlighted in the table below will apply in varying ways at the point of production in cocoa. Obviously all the steps will apply when the cocoa farm is being set up for the very first time. Nonetheless, whether it is the first time starting a cocoa farm or the yearly maintenance of the cocoa farm, there are several activities involved in the growing of cocoa that demand the time and attention of the cocoa farmer. A successful cocoa growing and harvesting season, save for weather conditions over which the farmer has no control, requires the right strategic choices at the point of production.

Table 6: Key Decision Points at the Point of Production in Cocoa

Decision Point	Production Issues
Choosing seeds and seedlings to grow	Which seeds to choose, sow seeds in nursery beds or baskets, how to lift seedlings from nursery beds
Choosing and preparing the plantation site	Which site to choose, clearing the site, preparing the site for planting, method for planting the cocoa trees
Taking care of the plantation	Replacing missing seedlings, weeding and attending to the soil cover, pruning cocoa trees, properly applying fertilizer, protecting trees from insects and diseases,
Harvesting the pods	Which pods to harvest, when and how
Processing cocoa beans	Opening the cocoa pods, method of drying, ensuring the proper fermentation

Source of Information: *FAO Economic and Social Development Series, Better Farming Series,* No. 3/22, 1984.

Policy Choice. The state does not set up a state-owned enterprise at the point of production for the purpose of growing cocoa, although there is history of state involvement in the growing of cocoa. As mentioned in the previous section, the state owned a number of cocoa farms and was involved in the growing of cocoa. As a result of management challenges the state divested itself from all those farms and sold them to private actors.

State Actions. The Ghana Cocoa Board, the state agency charged with overseeing the cocoa sector, is tasked with encouraging the cultivation of cocoa. In response to this duty, the Ghana Cocoa Board provides extensive support to cocoa farmers. Year after year, very substantial investments in the cocoa industry are made through various program-specific initiatives or through units that are part of the state sanctioned Ghana Cocoa Board to ensure that production is on target. (http://www.cocobod.gh/index.php).

The Cocoa Research Institute of Ghana is one of the subsidiaries of the Ghana Cocoa Board. The institute provides important research services through which technical know-how about cocoa is developed and disseminated via extension services to cocoa farmers. Their research activities have enabled the dissemination of important information regarding cocoa production, such as the nature of the cocoa swollen shoot disease, the efficacy of spraying with insecticides as a control measure for pest infections, and the development of early-bearing and high-yielding cocoa hybrids, among others. The information has been used as the basis for state initiatives such as the mass cocoa spraying exercise.

The Cocoa Swollen Shoot Virus Disease Control Unit is a unit within the Ghana Cocoa Board. This unit provides cocoa farmers with very important extension services, rehabilitation of infected cocoa trees, replanting of cut-down infected cocoa trees, and the removal of mistletoe and several other diseases that threaten successful cocoa production.

The Seed Production Unit of the Ghana Cocoa Board operates a number of seed gardens through which it nurses and provides to cocoa farmers high-yielding and early-bearing hybrid cocoa types. According to information obtained from the website of the unit, it produces about 1.5 million hybrid pods of cocoa per year. Additionally, it raises about two million cocoa seedlings per year.
(http://www.cocobod.gh/seed_production.php)

Key Sector Characteristic. Cocoa's contribution to the economy is the key characteristic that sustains the choice of cocoa growing as a largely private activity supported with substantial investments from the state. What kind of contribution does the cocoa sector make to the economy? In terms of employment, the cocoa sector provides employment for three categories of people—those affiliated with the Ghana Cocoa Board, cocoa farmers, and cocoa farmhands. The last count of these three categories of workers with the cocoa sector showed that the Ghana Cocoa Board employs about 6,121 workers, that there were about 800,000 cocoa farmers, and that there were 3.2 million farmhands. (Tutu 2011, 30). Furthermore, the cocoa sector has important links to other sectors of the economy. A percentage of the cocoa beans produced in any year is processed domestically. As reported in Ashitey (2012, 5), "there are four major cocoa processing companies in Ghana that process the cocoa beans into primary products, such as, liquor,

butter, powder and cake. About 90% of all processed cocoa is exported whilst the remaining ten percent is used in the production of confectionery products. Locally there are about ten (10) companies that produce cocoa confectionery products, such as, chocolate, cocoa beverages, cocoa powder and other chocolate candies, ice cream, and chocolate drinks." These economic enterprises also provide employment in the economy as well as important sources of domestic revenue for the state. In examining the overall performance of the agricultural sector, cocoa is the most important positive driver of growth in the sector, contributing as much as 14% towards the growth of the sector in 2011 (ISSER 2012, 107). Cocoa's contribution to gross domestic product(GDP) is usually calculated in two ways—cocoa's contribution to agriculture GDP and its contribution to overall GDP. Between 2008 and 2012, cocoa contributed an average of 11% to the total GDP generated by the agriculture sector (figure is calculated based on limited data available from the Ghana Statistical Services National Accounts Bulletin, September 2012). The table below shows the contribution from cocoa to overall GDP over a 20-year period from 1993-2012.

Table 7: Cocoa's Contribution Towards Overall GDP, 1993-2012

Year	% Contribution Towards Overall GDP
1993	2.8
1994	3.0
1995	3.2
1996	3.2
1997	3.3
1998	3.6
1999	3.4
2000	3.5
2001	3.3
2002	3.1
2003	3.5
2004	4.3
2005	4.6
2006	4.4
2007	4.0
2008	3.9
2009	2.5
2010	3.2
2011	3.6
2012	3.4

Source of Data: Tutu 2011 and Ghana Statistical Services.

Cocoa's contribution to overall gross domestic ranges from 2.5% to 4.6%. On average, cocoa contributes about 3.5% towards overall GDP each year. The resource sector characteristic survey highlighted the contribution of cocoa to the economy. In the survey, 97% of respondents agreed or strongly agreed that cocoa is a major contributor to the economy of Ghana. Among respondents affiliated with the public sector, 98.1% agreed or strongly agreed with this statement. Among respondents not affiliated with the public sector, 94.1% agreed or strongly agreed with the statement. When the results are examined by the years of cocoa sector experience of respondents, 96.4% of those with five years or less experience agreed or strongly agreed with the statement. 93.8% of those

with 6-10 years of experience agreed or strongly agreed, while 100.0% of those with more than 10 years of experience agreed or strongly agreed with the statement. These results show overwhelmingly the agreement among survey respondents as to the importance of the economic contribution of the cocoa sector. In the course of field interviews, the cocoa sector's contribution to the economy was often cited as a reason for the policy choice of the state. The contribution to the economy was described as manifesting itself in three ways—contribution to employment, contribution to the GDP, and links to other domestic industries that use cocoa as a raw product for the various consumable goods they produce.

Enabling Factors. The policy choice of keeping cocoa at the point of production in the hands of cocoa farmers and in essence a largely private activity is further reinforced by state capacity issues. Given the contribution cocoa makes to the economy, it makes sense that it is privately grown when one considers state capacity as part of the equation. When asked about state capacity to engage in successful cocoa growing, 69.7% of survey respondents agreed or strongly agreed that the state has the capacity to engage in the key activities in the cocoa sector (e.g. growing cocoa) compared to cocoa farmers. Among respondents affiliated with the public sector, 71.7% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 67.6% agreed or strongly agreed with the statement. When the results are examined by the years of experience, 69.1% of those with five years or less of experience sector agreed or strongly agreed with the statement. 68.1% of those with 6-10 years of experience agreed or strongly agreed, while 74.1% of those with more than 10 years of experience agreed or strongly agreed

with the statement. The percentages vary between those affiliated or not affiliated with the public sector. Additionally, there is a divergence of views on this statement based on years of experience with the sector. Although the picture is mixed, a majority of respondents see the state as having the capacity to engage in cocoa farming. This perception raises the question then as to why the state is not one of the key actors in growing cocoa. The survey results, however, are contradicted by information obtained during interviews. First, I found out that the state (Ghana Cocoa Board) did own a number of cocoa plantations from the late 1970s till the early 1990s throughout all cocoa producing regions in Ghana, and was fully engaged in the cultivation of cocoa. The plantations were set up under COCOBOD Plantations Limited. These cocoa plantations existed alongside the several small-holder farms across the cocoa producing regions. However, the state gave up those farms through the divestiture process. According to two well-informed persons with a long history of association with the cocoa sector, the plantations were also beset with poor management practices. In essence the state was in no position to efficiently manage these cocoa plantations and successfully grow cocoa. In a follow-up interview with one of the well-informed persons, I inquired whether it was better to keep the growing of cocoa in the hands of cocoa farmers on their small-holder farms with the critical support provided by the state, as opposed to the state also trying to be a cocoa grower on plantation scale. My question was based on the failure of the cocoa plantations set up by the Ghana Cocoa Board. The well-informed person responded affirmatively, arguing that cocoa was more effectively grown by cocoa farmers with critical support from the state. The key point here is that contribution to the economy and

the choice to leave cocoa mainly as a private activity at the point of production is reinforced by challenges to state capacity.

The extent of the investment the state makes in the cocoa sector at the point of production enables a policy choice of leaving cocoa growing to cocoa farmers. In 2001, the state initiated two programs: Cocoa Pest and Disease Control (CODAPEC) and Cocoa High Technology (Cocoa Hi-Tech) programs. As Baffoe-Asare, Danquah and Annor-Frempong (2013, 278) note these were technology based interventions to address key production challenges in the cocoa sector. In particular, the main goal of the intervention was to reduce or eliminate the two major cocoa pests, namely capsids and black pod disease. According to the authors, the initiative had several components including cultural maintenance practices of cocoa growing (drainage issues, weeding of the farm regularly, removal of dead husks and pods, etc.); fertilizer application, which type of fertilizer and timing of application; use of fungicide and which type of fungicide; fermentation and drying practices; and application of pesticides practices. Below I highlight examples of such investments in the cocoa sector from information gathered by examining budget documents and statements from the Ministry of Finance and Economic Planning covering the period of 1999-2012 (the years for which I was able to obtain information). A rough calculation of a number of initiatives ranging from disease and pest control, fertilizer application and mass spraying exercises among others show an approximate state investment of about $172 million.

1. The rehabilitation of roads to facilitate the transportation of cocoa from the growing areas features prominently in the budget statements examined. The state has consistently devoted money for the rehabilitation and repair of these roads.
2. Disease and pest control programs also feature prominently, with the state devoting significant resources to undertake these exercises.
3. The state also makes investments that serve as incentives to encourage cocoa production. The budget statements show program initiatives such as a pension scheme for cocoa farmers, affordable housing schemes, increase in funding for the scholarship program, and car purchasing schemes, among others.

The substantial investments made by the state were reflected in the results of the resource sector characteristic survey. 77.1% of respondents agreed or strongly agreed that the state invests a lot of resource in the cocoa sector. Among respondents affiliated with the public sector, 75% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 84.4% agreed or strongly agreed with the statement. When the results are examined by the years of experience of respondents, 80.0% of those with five years or less experience agreed or strongly agreed with the statement. 86.7% of those with 6-10 years of experience agreed or strongly agreed, while 64.0% of those with more than 10 years of experience agreed or strongly agreed with the statement.

Another enabling factor to consider is the historical antecedents of cocoa growing. As mentioned earlier, cocoa began as a largely private activity. And even as the post-independent state recognized the economic value of cocoa, history had shaped the growing of cocoa in such a way that it was left to the cocoa farmers to continue growing

the crop. As I will argue in the next chapter, in the timber sector, the size of alternative non-state actors matters. In the case of cocoa, it reinforced the private growing of cocoa in the sense that there were several thousand cocoa farmers to do the cultivation of the crop. This meant that even if the state decided against the setting up of a state-owned enterprise to take up cocoa growing, the size of the alternative actors was big enough to successfully grow a crop of such substantial economic importance. The size and performance of alternative actors also helps expose the limited capacity of the state. Private cocoa farmers have successfully grown whereas the attempts of the state to grow cocoa proved unsuccessful.

To recap, at the point of production cocoa is privately grown with substantial support from the state. The key is the contribution cocoa makes to the economy of the country, enabled by other factors such as state capacity challenges, state investment, and the availability of alternative actors ready to grow cocoa. In the next section I will proceed to discuss the key sector characteristic and enabling factors that shape the choices of the cocoa sector at the point of sale and the enabling factors and strategies that sustain the choice at the point of sale.

Cocoa at the Point of Sale

Selling Cocoa. The point of sale of cocoa involves a number of key steps. In the figure below this point begins where the cocoa farmer presents his or coca for sale.

Development from flower to pod over 5 →	Harvest of ripe pods →	Field Storage of Pods →	Pod opening and wet

months				for 0-10 days		bean removal		
→	Fermentation 5-6 days	→	Drying 2-12 days	→	**Presentation of Cocoa for Sale by Farmers**	→	Storage at Collection Centre	
→	Storage in Export Store	→	Marine Transport to Europe	→	Storage of Cocoa in Consuming Countries	→	Conversion into Cocoa Products	

Source: Federation of Cocoa Commerce

Figure 1: Illustration of Key Steps in Cocoa Cultivation and Marketing

At the point of sale in cocoa, there are typically three systems that are used. The systems can be differentiated along several dimensions—legal ownership of the crop, physical handling of the crop, domestic price setting, price stabilization, marketing costs, and margins and produce prices (Varangis and Schreiber 2001, 54). The dimension of interest to this research is the domestic price setting, given the operationalization of the dependent variable of this study. In the free market system, the price of cocoa is based on prevailing international market prices and determined by the market forces involved in the cocoa supply chain. In the stabilization fund system, producer prices are also set administratively but the fund is not linked administratively with the government. In the marketing board system, producer prices are set and fixed administratively in conjunction with government authorities (2001, 53-54).

Policy Choice. Producer price fixing by the Ghana Cocoa Board is the primary mechanism used for rent extraction from the cocoa sector.

State Actions. The Ghana Cocoa Board is charged with the responsibility of determining the producer price to be paid to the cocoa farmer, which is then approved and announced by the government. In order to do this, Ghana Cocoa Board proceeds as follows. There is a Producer Price Review Committee (PPRC) made up of representatives of cocoa farmers, licensed cocoa buyers, cocoa haulers, the Ministry of Finance, the Bank of Ghana, the Institute of Statistical, Social and Economic Research (ISSER) of the University of Ghana, and COCOBOD officials. The committee recommends a price, which they determine at the beginning of the cocoa season in October and remains in place through September of the following year. The price is computed by the committee after factoring in several indicators. While rent extraction is at stake for the state, it is often repeated by the state that the goal is to ensure cocoa farmers are offered a certain percentage of the free on board (FOB) price of cocoa. Over the last several years, as I learned and as documented in a number of studies, the goal has been to offer farmers at least 70% of the FOB price of cocoa. The committee goes through a number of steps before it eventually settles on the producer price. I illustrate the process hypothetically in Table 8.

Table 8: Determination of Cocoa Producer Price

Dimension	Amount
Revenue Estimation	
Average FOB price (est)	2,500
Exchange rate (est)	1.5
Crop size (est)	900,000
Total (1)	3,375,000,000.00
Deductions (operational costs)	
Item 1	2,890,000.00
Item 2	16,000,000.00
Item 3	6,780,000.00
Item 4	700,000.00
Item 5	5,900,000.00
Item 6	3,000,000.00
Item 7	43,000,000.00
Total (2)	**78,270,000**
Total 2 – Total 1	**3,296,730,000**
Net FOB Price (Total 1- Total 2/Estimated crop size)	**3,663**
Farmer Price (% goal of net FOB)	***2,564***

Source of data: Hypothetical numbers based on author's understanding of the price determination process

First the committee estimates the price per ton of cocoa, in dollars, it expects in the coming season, based on market information. Then it estimates the exchange rate of the local Ghanaian currency to the US dollar. The committee then estimates the expected crop size for the upcoming year. This can be described as the revenue side of the process. Once the revenue estimation side of the equation is done, the committee proceeds to determine the costs of the operations of the Ghana Cocoa Board that must be deducted from the expected revenue. The following are some of the deductions that are factored into the price determination: disease and pest control, scholarship fund, jute sacks, cocoa swollen shoot and virus disease program, cocoa high tech program, and child labor

certification. The total of the deductions are subtracted from the revenue estimates to get the net revenue. To get the net FOB price, the net revenue is divided by the expected crop size. From the net FOB price, a percentage is set aside for the farmer in the form of a producer price. The percentage is usually based on the stated goal of the government. The current goal is 70%, so in the hypothetical data presented in the table above the farmer gets 70% of $3,663 in the form of producer price.

The price determination process is no easy task. It is a very meticulous and time-consuming process. Members of the committee have to factor in a number of variables. For instance, the government has a habit of promising increases in the producer price of cocoa to farmers. Such promises must be fulfilled, but are always made even before the producer price committee has had a chance to make estimations, especially on the revenue side, as displayed in the table above. Hence, the committee has to be sensitive to the political environment in which the producer price is being determined. While the producer price review committee will argue that price determination is purely an economic and commodity-trading exercise, it is hard to imagine the committee being totally oblivious to the politics of the day. Additionally, the committee has representatives of the government who are there to ensure that the interests of the state are also factored into the determination of the producer price. The revenue determination is also based on an estimation of the expected crop size for that given year. However, there are other factors that determine crop size over which the producer price review committee has no control, such as weather conditions and effective disease control. These could considerably lower the revenue estimations. In addition, the committee has no

control over the price that will be offered on the international commodities market. The committee then has to "hedge their bets" correctly. To complicate matters, there is no history of lowering the producer price once the season starts if projected crop size and revenue do not materialize. The producer price is guaranteed, and it is guaranteed over several months.

In addition to the price-setting mechanism, cocoa farmers are only allowed to sell their cocoa beans to companies who are licensed by the Ghana Cocoa Board. For years the Produce Buying Company, a state owned company, had the sole responsibility of purchasing cocoa beans from the farmer. With the introduction of reforms in the internal marketing of cocoa, the state now licenses private buyers to purchase cocoa. These private buyers are known as Licensed Buying Companies.

Key Sector Characteristic. The state's dependence on the sector as a guaranteed source of foreign exchange drives this rent-extraction mechanism. During interviews, the importance of the cocoa sector to the state in terms of foreign exchange was raised and reiterated several times. One interviewee described the foreign exchange imperative as "the cocoa sector provides the state with a guaranteed source of foreign exchange," while another described it as "the cocoa sector provides critical foreign exchange needed for other development purposes."

Table 9: Contribution of Cocoa to Total Export Earnings

Year	Total Export Earnings (US $ millions)	Total Contribution from Cocoa (US $ millions)	% Contribution from Cocoa
1986	749	504	67.2
1987	826	495	59.9
1988	881	462	52.4
1989	807	408	50.5
1990	896	361	40.2
1991	997	346	34.7
1992	986	303	30.7
1993	1,063	286	26.9
1994	1,237	321	25.9
1995	1,431	389	27.2
1996	1,570	552	35.1
1997	1,489	471	31.6
1998	2,090	621	29.7
1999	2,005	521	26.0
2000	1,936	438	22.6
2001	1,867	381	20.4
2002	2,063	464	22.5
2003	2,562	817	31.9
2004	2,704	1,025	37.9
2005	2,802	908	32.4
2006	3,726	1,189	31.9
2007	4,194	1,103	26.3
2008	5,269	1,223	23.2
2009	5,839	1,425	24.4
2010	7,960	1,656	20.8
2011	12,785	2,033	15.9

Source of Data: ISSER, *State of The Ghanaian Economy*, 1992, 1997, 2002, 2007, 2009, 2012 editions.

The table above shows the contribution of cocoa to the total export earnings from the entire economy. In this table, cocoa's contribution is measured only in cocoa beans and not any other cocoa products that are processed and exported during the course of the year. Cocoa beans are the key export item from the cocoa sector. On average, for the

years of data available, cocoa has contributed about $909 million in total foreign exchange earnings to the state. In terms of percentage contribution, cocoa has contributed an average of 32.6% of all foreign exchange earned. The table below looks only at export earnings from the cocoa sector alone. Earnings therefore include other cocoa products besides cocoa beans. From the table, cocoa beans contribute about 84% of total export earnings of the total export earnings in the cocoa sector.

Table 10: Cocoa Export Earnings and Percentage Contribution from Cocoa Beans

Year	Earnings from Cocoa Exports (US $ millions)	Contribution from Cocoa Beans (US $ millions)	% Contribution from Cocoa Beans
1986	503	470	93.4
1987	495	451	91.0
1988	462	422	91.5
1989	408	381	93.5
1990	361	324	89.8
1991	349	316	90.4
1992	303	277	91.5
1993	286	251	87.6
1994	320	295	92.1
1995	390	361	92.7
1996	552	480	86.9
1997	470	385	81.9
1998	617	538	87.2
1999	552	497	90.0
2000	437	381	87.1
2001	381	317	83.2
2002	463	386	83.3
2003	818	692	84.6
2004	1,026	984	96.0
2005	908	819	90.1
2006	1,187	1,041	87.7
2007	1,103	946	85.8
2008	1,487	1,225	8.2
2009	1,866	1,422	76.2
2010	2,285	1,660	72.6
2011	2,871	2,028	70.6

Source of Data: ISSER, *State of The Ghanaian Economy*, 1992, 1997, 2002, 2007, 2009, 2012 editions.

Attached to the producer price fixing is another important source of revenue from the cocoa sector, which is the export duty. The table below shows exports duty earnings from cocoa exports. On average, during the years for which export duty data as well as

exchange rate data were available, cocoa exports contributed about $76.8 million dollars in export duties.

Table 11: Export Duty Earnings from Cocoa

Crop Year	Export Duty Earnings
1999/00	$ 36,588,555
2000/01	$ 32,325,766
2001/02	$ 40,890,243
2002/03	$ 92,223,529
2003/04	$ 109,909,090
2004/05	$ 70,439,560
2005/06	$ 66,956,521
2006/07	$ 98,984,086
2007/08	$ 50,274,782
2008/09	$ 60,619,736
2009/10	$ 233,799,891

Source of Data: Ghana Cocoa Board. Dollar equivalent calculated by author.

The state's dependence on cocoa is very clear. As a source of foreign exchange earnings, cocoa makes a substantial contribution to the state. As a source of export duty earnings, cocoa makes important contributions to the state as well. In the survey, 83.8% of respondents agreed or strongly agreed that the state is dependent on the cocoa sector for development. Among respondents affiliated with the public sector, 81.1% agreed or strongly agreed with this statement. Among respondents not affiliated with the public sector, 88.2% agreed or strongly agreed with the statement. When the results are examined by the years of experience, 78.2% of respondents with five years or less experience agreed or strongly agreed with the statement. 87.5% of those with 6-10 years

of experience agreed or strongly agreed, while 92.6% of those with more than 10 years of experience agreed or strongly agreed with the statement.

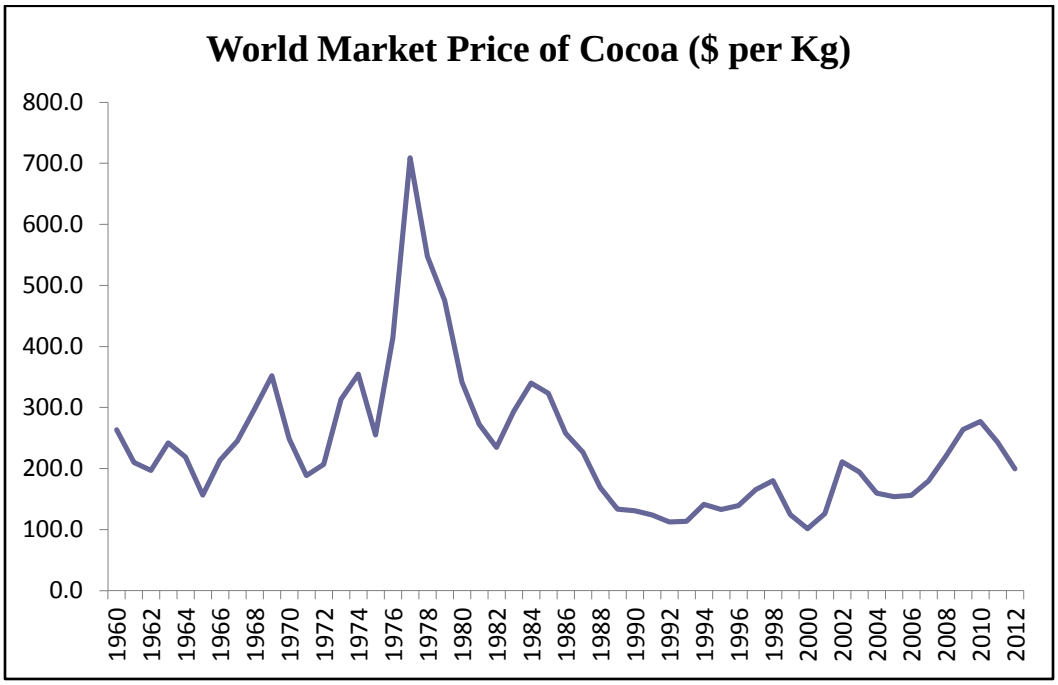
Enabling Factors. Tied to dependence is the issue of long-term reliance on the sector. Every resource has a life cycle. The longer the life cycle of the resource, the more reliant the state can be on the resource. Naturally, therefore, the greater the state's reliance on the resource, the greater the control the state will exert in the sector. 60.2% of respondents agreed or strongly agreed that the state will be able to rely on cocoa for the long term development needs of Ghana. Among respondents affiliated with the public sector, 61.5% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 64.7% agreed or strongly agreed with the statement. When the results are examined by the years of experience of respondents with the cocoa sector, 54.5% of those with five years or less of experience agreed or strongly agreed with the statement. 66.7% of those with 6-10 years of experience agreed or strongly agreed, while 66.7% of those with more than 10 years of experience agreed or strongly agreed with the statement. And so because the state relies heavily on the cocoa sector for its long term development agenda, the foreign exchange earning imperative drives the method of rent extraction—it is guaranteed and it generates surplus as well.

The capacity of the state compared to the cocoa farmer further enables this rent-extraction mechanism. The ability of the farmer to successfully negotiate a better price for the cocoa depends very much on access to market information such as current demand, current market prices, alternative buyers, etc. During interviews, the issue of state capacity compared to that of the rural cocoa farmer was raised. In very unflattering

terms, interviewees posed the counter-question of what the rural cocoa farmer knew about commodity trading. The point they were making was that without access to current market information, there was no way the rural cocoa farmer could successfully trade in cocoa. In the view of the interviewees, the state, in seizing control of the sector at the point of sale, was providing a critical service to the cocoa farmer while at the same time ensuring that the state's foreign exchange imperative was not threatened. Besides, it appears that the cocoa farmer has to be well informed of all these market dynamics in order to trade successfully. When the state depends heavily on the sector for rents in the form of cocoa foreign exchange earnings, it cannot risk the farmer being unsuccessful. In the survey, 94.9% of respondents agreed or strongly agreed that the state has the capacity market and export cocoa compared to cocoa farmers. Among respondents affiliated with the public sector, 96.2% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 91.2% agreed or strongly agreed with the statement. When the results are examined by the years of experience, 92.7% of respondents with five years or less of agreed or strongly agreed with the statement. 93.8% of those with 6-10 years of experience agreed or strongly agreed, while 100.0% of those with more than 10 years of experience agreed or strongly agreed with the statement.

The market fluctuation of cocoa prices is another factor that enables this use of fixed producer prices. Interviewees argued that the state's intervention in pricing, where it sets a fixed producer price, is meant to insulate the cocoa farmer from the wide fluctuations in the prices of cocoa on the international commodities market. The argument was that by providing the cocoa farmer with a guaranteed fixed price, the state

was assuring cocoa farmers that regardless of what happened in the international arena, the farmers would be reasonably compensated for their work. I obtained average market prices of cocoa from the World Bank's Commodity Price Databank. The figure below shows the historic market prices of cocoa per kilogram over a 53-year period.



Source: World Bank Commodity Price Data (Pink Sheet)

Figure 2: World Market Price of Cocoa, 1960-2012

The figure above does show relative instability in the prices of cocoa with up and down movements over the years. In fixing prices at which the state buys the cocoa from the farmer, the state assumes the risk associated with the fluctuating prices on the international market and again gives the producer a certain amount of economic certainty.

This argument is plausible. However, in giving the farmer that protection against the price instability, the state also insulates itself and protects its rent-seeking interest. This is because the price offered to the farmer is always below the world market price, and is also offered in the local Ghanaian currency, which means that even in the event of low international market prices, the state still stands to gain the rents it seeks from the sector. In the table below, I provide an example of the difference between the world market price and the producer price offered to the farmer to illustrate the point.

Table 12: Comparison of World Market Price of Cocoa and Producer Price of Cocoa in Ghana

Year	World Market Price(Yearly Avg. in US $ per ton)	Producer Price Offered per ton in Ghana (US $)	Difference (US $)	% of World Market Price Offered
2001	1,013	484	529	47.7
2002	1,259	756	503	60.0
2003	2,108	1,000	1,108	47.4
2004	1,941	1,023	918	52.7
2005	1,595	989	606	62.0
2006	1,538	978	560	63.6
2007	1,558	984	574	63.2
2008	1,797	1,304	493	72.5
2009	2,200	1,157	1,043	52.6
2010	2,641	1,678	963	63.5
2011	2,773	2,092	681	75.4

Source of Data: Ghana Cocoa Board, World Bank Commodity Prices Data and Author's Calculation.

The table clearly demonstrates that cocoa farmers are offered prices lower than what is offered on the international commodities market. On average, the price offered to farmers during this time span is roughly 60% of the price on the international market. The

important point to note is that all the foreign exchange earned is retained by the state, so the 60% of the world price is still paid to the cocoa farmer in local currency. Yes, the difference can be considered compensation for the risk the state absorbs by offering guaranteed producer prices and a guaranteed market for the cocoa farmer, not including several other marketing and sales costs that the farmer does not have to bear. Ultimately, though, the fluctuations of the market price and the state's use of producer price fixing allow its rent extraction from the sector to remain relatively unharmed.

Additionally, interviewees argued that the state provides a guaranteed market and a guaranteed price to the cocoa farmer, which gives the farmer a certain level of economic certainty and security at the beginning of each cocoa season. Also, the farmer is able to enjoy economies of scale because instead of the farmer trying to sell a few bags of cocoa directly to the international market, the state acts as a single buyer and thus saves the famer from all the costs associated with transporting the cocoa from the point of production to a port of export. Last but not least, the state acts to further protect the farmer from private interests who will have a tendency to cheat farmers by taking advantage of their lack of access to current market information.

To recap, the state uses producer price fixing at the point of sale as the primary mechanism for extracting rents from the cocoa sector, ultimately giving the state greater control in the sector at that key decision dimension. Sector characteristics and enabling factors such as the state's dependence on the sector for foreign exchange, state capacity for commodity in comparison to the cocoa farmer's capacity for commodity, and the

fluctuations of the world market price all converge to sustain the policy choice of the state at the point of sale.

Other Points to Note. The resource sector characteristics survey revealed a few insights of the well-informed persons associated with the sector. Those insights did not emerge in interviews and are not strongly supported by secondary data. However, they provide important insights into the cocoa sector so they are noted here as well.

Given the role that the international donor community plays in supporting the economies of countries such as Ghana, it is commonly thought that the donor community sometimes dictates the policies that recipient countries must adopt. Two donor institutions are typically singled out: the World Bank and the International Monetary Fund. There is no denying the active role played by the international donor community in the development efforts of places like Ghana. Through loans and grants or the policy conditions that are attached to loans, these donors directly or indirectly shape the choices of the state. Experience has also shown that the donor community has a preference for less state involvement rather than more state involvement in the management of the economy in several key areas. Reducing the role of the state has been a common theme echoed by institutions such as the World Bank and the International Monetary Fund. It is against this backdrop that I argue that the greater the influence of the international donor community, the less control the state exerts in its choices in the sector. In the survey, 72.7% of respondents agreed or strongly agreed that the international donor community (World Bank, IMF, etc.) has a greater influence on the policies adopted in the cocoa sector than do the cocoa farmers. Among respondents affiliated with the public, sector

66.0% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 82.4% agreed or strongly agreed with the statement. When the results are examined by the years of experience in the sector, 69.1% of respondents with five years or less of experience agreed or strongly agreed with the statement. 87.5% of those with 6-10 years of experience agreed or strongly agreed, while 70.4% of those with more than 10 years of experience agreed or strongly agreed with the statement. Those affiliated with the public sector disagree with those not affiliated with the public sector regarding the role and influence of international donors on the policies adopted by the state in the cocoa sector. Likewise, there is a divergence of views on this statement based on years of experience with the sector. During the interviews when I asked what drives the state's behavior, there was hardly any mention of the influence of the likes of the World Bank or the IMF. Only one interviewee brought up the subject of the World Bank to illustrate how successfully the state had resisted pressure to liberalize the marketing and export of cocoa by opening it up fully to market actors. The Economic Recovery Program and the Structural Adjustment Program embarked upon in the 1980s under the direction of the IMF and World Bank involved prescriptions for making changes to the cocoa sector. The state had to agree to a number of conditions, such as reducing the labor force of the Ghana Cocoa Board, reducing the operating costs of the board as a share of total cocoa revenue, state divestment from the ownership of several cocoa plantations, and the transfer of board functions in areas such as transportation to the private sector, among others (Hutchful 2002, 67). The influence of the international donor community is more

episodic than consistent in shaping the everyday policies and practices of the cocoa sector. As a consequence, not much credence can be lent to this factor.

Stakeholders are important, especially if they are able to organize and shape state policies in the direction they prefer. Where these resource endowments are concerned, what I have discovered is that stakeholders prefer greater freedom from the state in their work in the resource sector. I therefore argue that the more successful stakeholders are at influencing state policies, the less control the state will exert in the sector. In the cocoa sector, I was particularly interested in the extent to which cocoa farmers held sway over the state. 60.6% of survey respondents agreed or strongly agreed that the cocoa sector has stakeholders who are able to successfully influence government policy on cocoa. Among respondents affiliated with the public sector, 60.4% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 61.8% agreed or strongly agreed with the statement. When the results are examined by the years of experience, 60.0% of those with five years or less experience in the sector agreed or strongly agreed with the statement. 62.5% of those with 6-10 years of experience agreed or strongly agreed, while 59.3% of those with more than 10 years of experience agreed or strongly agreed with the statement. There is a Ghana Cocoa, Coffee and Sheanut Farmers Association dedicated to, among other things, securing favorable commodity prices for the farmers whose interests they represent. During interviews, the ability of farmers or groups representing the interests of cocoa farmers barely came up to allow for an assessment of the efficacy of stakeholders to influence cocoa sector policies. I asked during one of the interviews if, as it is often argued, the state takes advantage of cocoa

farmers, why cocoa farmers have been able to successfully alter state behavior towards them. It was argued that cocoa farmers are so spread out through the producing regions that it was difficult to mobilize them for effective action. Farmers have a representative on the producer price review committee and therefore have input into the determination of the producer price offered. The state has over the last several years made a conscious effort to increase the share of share of what is called FOB to cocoa farmers. It is a clearly stated goal of the state to offer at least 70% of the FOB to the cocoa farmer. As to whether this is a result of the influence of cocoa farmers or the stakeholders that represent farmers' interests, it is hard to tell. It must be noted, however, that cocoa farmers have made it a habit to always press the state to offer better producer prices for cocoa. Ultimately, the influence of stakeholders cannot be treated as one of the sector characteristics that sustain state policy choices in the cocoa sector.

To recap cocoa at the point of sale: there is a price-fixing mechanism in which the state sets the producer price of cocoa using a producer price review committee. The committee uses a well-defined process to arrive at the price. The fixing of producer prices is driven by key sector characteristics and enabling factors such as dependence on the sector for foreign exchange and other revenue, capacity of the local cocoa farmer for commodity trading, insulating the cocoa farmer against price volatility, and long-term reliance on the sector.

Cocoa Sector Choices and the Material Well-being of Cocoa Farmers

The secondary line of inquiry in this dissertation looks at the consequences of state policy choices on the material well-being of those whose everyday livelihoods

depend on work in the sector. In the cocoa sector, my primary interest is how cocoa farmers fare as a result of the policy choices of the state in the sector. How do the state's policies affect the material well-being of the cocoa farmer? I looked at it from the point of sale and the rent-extraction mechanism. I argue the cocoa farmer encounters the state at the point of sale where the farmer is in search of revenue for his or her cocoa beans and the state is in search for rents. The state offers a price, which enables the cocoa farmer to earn some income. However, because the state has rent extraction interest, it offers a particular price to the cocoa farmer. In the cocoa sector, unfortunately for the cocoa farmer, the state is his or her only market, which means that there is no alternative to the price offered by the state. It is a "take it or leave it" proposition by the state. Any difference between the state's offered price and the cost of production by the farmers is kept by the farmers to take care of personal needs. The other dimension of the material well-being of interest to me is the extent to which cocoa farmers have access to basic facilities and institutions to address key needs such as education, economic, and political needs. In this section, I discuss the impact of rent extraction on the material well-being of cocoa farmers. The data is based on a survey of cocoa farmers in two towns in the Western Region. The information therefore is limited to the experiences of those cocoa farmers and is being used here for illustrative purposes to gain a sense of the consequences of state policy choices. I will first describe the demographics of the farmers and then proceed to describe various aspects of their well-being addressed in the survey. The table below highlights the key demographic characteristics of the respondents to the survey.

Table 13: Demographic Profile of Cocoa Farmers in Asuahyiam and Yireasi, Western Region

Demographic Characteristics	Percentage
Length of Time in Cocoa Farming	
1-5 years	17.8
6-10	27.1
11-15	8.4
16-20	13.1
More than 20 years	33.6
Gender	
Male	67.3
Female	32.7
Education	
No formal schooling	27.1
Middle school/junior high school	26.2
Some primary school	22.4
Primary school completed	15.0
Marital Status	
Married	83.2
Widowed	7.5
Single	4.7
Head of Household	
Yes	71.0
No	28.0
Religion	
Christian groups/denominations	72.0
Muslim groups/denominations	18.7
None	9.3
No. of Children	
1-5	54.2
6-10	38.3
Average Age	46.8
Median Age	46.0

There are three key areas I want to point in the above table. The first is the predominance of men in cocoa growing in the two towns surveyed. The second is the low level of educational attainment among the cocoa farmers surveyed. The last is the length of time

in cocoa farming; the table shows that for most of the farmers surveyed, cocoa farming has been a life-long occupation.

Household Income. I will now proceed to examine a number of aspects of their material well-being. The table below reflects the self-reported monthly household income of the cocoa farmers surveyed.

Table 14: Monthly Household Income of Cocoa Farmers in Asuahyiam and Yireasi, Western Region

Amount (GH₵)	US Dollar Equivalent	% Cocoa Farmers
Less than 100	55	20.6
101-200	56-111	17.8
201-300	112 -167	18.7
301-400	168-223	7.5
401-500	224 -279	4.7
Above 500	279	4.7

Source: Quality of Life Survey. Dollar equivalent calculated based on World Bank Exchange Rate data for 2012.

Roughly half of cocoa farmers responding to the survey indicated earning 100-500 Ghana cedis (equivalent of about $50-$250) a month. The remaining half are split into two income groups: 29.5% earn more than 500 Ghana cedis (equivalent of about $250) a month, and another 21% earn less than 100 Ghana cedis (equivalent of about $50). I used two indicators of the World Bank and the target goals in the Millennium Development Goals to make some judgments about the extent of poverty among these cocoa farmers. Extreme poverty is examined by looking at the percentage of people who live at or below an income level of $1.25 a day. The other poverty indicator looks at the

percentage of the population who live at or below a level of $2.00 a day. From the table above I calculated the high end and low end of the ranges by dividing the dollar equivalent of the household income by 30 days. In the table below I show the percentage of farmers and the dollar-per-day ranges for their households.

Table 15: Household Income Per Day for Cocoa Farmers in Asuahyiam and Yireasi, Western Region

	Dollars Per Day	
% of Cocoa Farmers	**Lower end**	**Upper End**
20.6	1.90	n/a
17.8	1.90	3.70
18.7	3.70	5.60
7.5	5.60	7.40
4.7	7.50	9.30
29.0	9.30	n/a

Using the standard of living at or below $1.25 a day for extreme poverty and at or below $2.00 per day for poverty, I examine this scenario as a way of demonstrating the impact that state policy has on the material well-being of cocoa farmers and their households. Take for instance the 20.6% of cocoa farmers in the above table whose dollar-per-day household income is $1.90. If one of these farmers heads a household of three (the worker, spouse, and one child), it means that each of these individuals have at their disposal $0.63 per day, putting all 20.6% in extreme poverty. If we apply the same logic of three household members to the 17.8% with household income falling between $1.90 and $3.70, each household member receives anywhere between $ 0.63 and $1.23, putting

them in a situation of extreme poverty. If we apply the same logic of three members per household to the 18.7% with per day household income falling between $3.70 and $5.60, each household member receives between $1.20 and $ 1.90 per day, putting them in a situation of poverty. This means that 38.4% of cocoa farmers and their households potentially live in extreme poverty with another 18.7% living in poverty. In 2012 when this survey was conducted, the daily minimum wage in Ghana was $2.65. Using the daily minimum wage in Ghana as a reference point, it exacerbates the poverty situation of cocoa farmers and their households. From Table 15, and using again a household of three, this means that at least 64.6% of cocoa farmers and their households live below the daily minimum wage. Living wages are beyond the scope of this study, but given the economic challenges in Ghana, most of the farmers represented in the table above will face economic challenges on a day-to-day basis.

Basic Living Conditions. Table 16 below shows the basic living conditions of cocoa farmers in the survey area. It is safe to say that cocoa farmers' basic living conditions do not reflect the economic value of the crop they grow and from which the state earns a lot of rent in the form of foreign exchange. The 70% access to electricity is higher than the national average of 60.5% in 2010, according to the World Bank's world development indicators. Even with the access to electricity, however, wood continues to serve as the main source of cooking fuel. From the information gathered about water sources, it is apparent that these cocoa farmers do not have tap water or private toilets in their homes. During my field trip I witnessed first-hand some of these basic living conditions in Agrave in the Brong Ahafo region, which happens to be my mother's cocoa-growing

village. It is no exaggeration to state that there are areas where cocoa farmers do live in deprivation.

Table 16: Basic Living Conditions of Cocoa Farmers in Asuahyiam and Yireasi, Western Region

Basic amenities	Source or Ownership status	Percentage
Source of drinking water	Protected well	66.4
Source of bathing water	Public well	66.4
Toilet type	Open pit latrine	57.9
Toilet status	Public	48.6
Source of energy	Electricity	70.1
Source of cooking fuel	Wood	99.1
Use and own mobile phone	Yes	57.0
Own a radio	Yes	81.3
Own a television	Yes	37.4
Own bicycle	Yes	14.0
Own motorcycle	Yes	13.1
Own car	Yes	1.9

Addressing Education Needs. Table 17 shows the presence of facilities that cocoa farmers can access to address the educational needs of the households in the cocoa-growing area of the survey. The table shows that from the pre-school level to the secondary school level there are facilities that are accessible to cocoa farmers if they need them to address their educational needs. There is also a technical or vocational facility in the area. However, there are no polytechnic or other tertiary institutions in any of the cocoa-growing towns or districts in the survey. The use patterns and the percentages have

to be understood within the context of whether there are members of the household who need to use those facilities.

Table17: Facilities for Addressing Educational Needs by Cocoa Farmers in Asuahyiam and Yireasi, Western Region

Facility	Exists?	Accessibility	Use Pattern
Nursery school	Yes	Walk	53.3%
Primary school	Yes	Walk	72.0%
Junior High School	Yes	Walk	45.8%
Senior High School	Yes	Public bus	33.6%
Technical/Vocational	Yes	Public bus	1.9%
Polytechnic	No	n\a	0.9%

Addressing Health Needs. Table 18 includes a list of facilities cocoa farmers can access to address their health needs and those of members of their household. The data gathered from the survey shows that these facilities exist and are accessible. The use pattern shows that cocoa farmers tend to use the government hospital in their area more than any other type of health facility.

Table 18: Facilities Used to Address Health Needs by Cocoa Farmers in Asuahyiam and Yireasi, Western Region

Facility	Exists?	Accessibility	Use Pattern
Clinic (government)	Yes	Public transport	1.9%
Clinic (private)	Yes	Walk	3.7%
Hospital (government)	Yes	Public transport	87.9%
Hospital (private)	Yes	Public transport	57.9%
Traditional healer	Yes	Public transport	8.4%
Polyclinic	No	n\a	n\a

Addressing Economic Needs. In Table 19 I look at how the cocoa farmers surveyed address their economic needs for food, transportation, and other necessities. Trade stores are petty trading stores in which cocoa farmers can get basic food items; the survey shows accessibility and frequent use of these stores. Although financial institutions—whether rural bank facilities or private banks—are present in the area, cocoa farmers under-utilize such facilities, which raises the question of how cocoa farmers obtain small loans when needed. The lack of a railway stop is not a surprise since the rail infrastructure in the country is virtually nonexistent.

Table 19: Facilities Used to Address Economic Needs by Cocoa Farmers in Asuahyiam and Yireasi, Western Region

Facility	Exists?	Accessibility	Use Pattern
Trade stores	Yes	Walk	100%
Fresh produce markets	Yes	Walk	97.2%
Rural bank	Yes	Public transport	16.8%
Private bank	Yes	Public transport	21.5%
Money lender	Yes	Walk	12.1%
Public transport stop	Yes	Walk	98.1%
Train station	No	n\a	n\a
Market Stalls (selling groceries and/or clothing)	Yes	Public transport	98.1%

Addressing Security Needs. Table 20 simply looks at how cocoa farmers address their security needs in case of fire or criminal activity. As the table shows, the police station is the facility used to address security needs, although it is very under-utilized. The two

towns surveyed are very rural towns where criminal activity is much lower than in urban areas. It is, therefore, logical that the survey shows low use of the police station by cocoa farmers. The important point to note though is that a police station exists and is accessible if needed.

Table 20: Facilities Used to Address Security Needs by Cocoa Farmers in Asuahyiam and Yireasi, Western Region

Facility	Exists?	Accessibility	Use Pattern
Police station	Yes	Public transport	21.5
Fire station	Yes	n\a	n\a
Neighborhood watch	No	n\a	n\a

Addressing Governance Needs. Cocoa farmers, just like other citizens, have governance needs and require avenues to bring those needs to the attention of state officials. In the table below I highlight a few key government institutions on which cocoa farmers can draw to address various governance needs.

Table 21: Facilities Used to Address Governance Needs by Cocoa Farmers in Asuahyiam and Yireasi, Western Region

Facility	Exists?	Accessibility	Use Pattern
Courthouse	Yes	Public bus	8.4%
Chief palace	Yes	Walk	18.7%
District assembly office	Yes	Public transport	8.4%
Government agency/office	Yes	Public Transport	3.7%
Political party office	Yes	Public transport	2.8%

There is no question about the presence of facilities in these two cocoa growing towns for addressing governance needs. Additionally, those facilities appear to be accessible. The question that remains is about the extremely low use of those avenues and facilities by the cocoa farmers. Do these cocoa farmers not have governance needs that can be channeled through, for example, a given political party? In extensive conversations with my mother, a cocoa farmer, she constantly talked about the plight of the cocoa farmer and how it is imperative that the state offers a better producer price for cocoa. Against this backdrop, it is surprising that the use patterns among these cocoa farmers of the above identified governance facilities show very low usage.

In summary, rent extraction from the cocoa sector has poverty implications for the cocoa farmer. Other factors also contribute to poverty, which I acknowledge, but the cocoa farmer is mainly dependent on cocoa income, which means that the extent of extraction by the state affects the net income of the cocoa farmer and his or her household. Additionally, except for access to electricity, the basic living conditions in terms of water source and toilet facilities do not reflect the fact that it is on the back of the cocoa farmers that the state earns so much in rents in the form of foreign exchange. The existence of schools and hospitals and governance institutions in these two towns means that there is a certain amount of social provision which cocoa farmers can use to address their education, health, economic, and governance needs.

Summary of Key Points from the Cocoa Sector

1. The policy choices are the following: no state retention of the rights to cocoa; no state enterprise for growing cocoa but instead reliance on private cocoa farmers;

and the use of producer price fixing as the primary mechanism for extracting rents from the timber sector.

2. The key sector characteristics driving policy choices in the cocoa sector are the following:

    a. Cocoa is not a natural resource shapes state policy at the point of ownership.

    b. Contribution to the economy shapes policy choice at the point of production.

    c. Dependence on the sector as a guaranteed source of foreign exchange shapes policy choice at the point of sale.

3. The enabling factors driving policy choices in the sector are the following:

    a. Historical antecedents, socio-economic characteristics of cocoa farmers and land tenure practices enable the policy choice at the point of ownership.

    b. Historical antecedent, the presence of alternative actors, state investment, long-term reliance, and state capacity help sustain the policy choice at the point of production.

    c. Nature of the actors, state capacity, and market fluctuations of cocoa prices help sustain the policy choice at the point of production.

4. The policy choices also carry with them implications for the material well-being of the cocoa farmer, particularly having to do with poverty and basic living conditions.

In the next chapter, I proceed to discuss the timber sector. In that chapter, I will discuss the key policy choices along the three dimensions of decision making, the key sector characteristics and enabling factors, and the consequences of those policies on the material well-being of workers in timber companies.

Chapter 4: Timber—Why the State Does What it Does in the Sector, and the Consequences

In this chapter, I show the key reasons for the different policy choices of the state in managing timber along three key dimensions—point of ownership (where the state retains ownership rights), point of production (where the state does not set up a state enterprise for the harvesting of timber), and the point of sale (where the state uses a quasi-price-fixing mechanism via a minimum guiding selling price for the purposes of rent extraction). I will explain the following regarding the policy choices of the state in the cocoa sector:

1. That at the point of ownership the nature of the resource in question enabled by historical antecedents is the basis for the state retaining rights to timber.
2. That at the point of production, state capacity, enabled by contribution to the economy and the presence of alternative actors is, the basis for the state contracting out timber harvesting to private actors.
3. That at the point of sale, revenue maximization, enabled by historical antecedents and protection of timber companies, is the basis for the state use of a guiding selling price as the primary mechanism for extracting rents from the timber sector.

Timber at the Point of Ownership

State Policy Choice: At the point of ownership in the timber sector, the state retains ownership rights to timber. The state's ownership rights can be traced to the Timber

Concessions Act of 1962. Section 16 of the Act addresses forest reserves and timber concessions. In particular, two sub-sections state clearly the ownership structure in the sector. In sub-section 3, the legislation specifies that any land on which rights to timber and trees have been granted through concessions are now vested in the president who will hold those lands in trust for the stools (landowners). In sub-section 4 of the act, all rights to timber or trees on any land are also vested in the president who then holds them in trust for the stool. The state, as embodied in the person of the president, acts a trustee of the resource for the stool. It is also important to note that the rights retained are restricted to the timber and not the land on which the timber grows. Prior to passage of this legislation, though, timber rights were not retained by the state. As Agyeman, Gyan, and Oduro note, rights to the land as well as to the trees/timber on the land belonged to the natives/stool (2007, 7).

State Actions. Since the state retains rights to timber, it sets up a number of entry rules that guide how access is granted to any individual or entity interested in the timber resource. The forest areas where the timber is found are placed into four categories, described by Paulus (2009) as follows: reserve areas (deemed protected areas where controlled logging is allowed and farming or other purposes not allowed); off-reserve areas (deemed not protected, usually degraded forest with farmland where logging activities have to be negotiated with farmers and landowners); globally significant biodiversity areas (where logging is prohibited); and wildlife reserve areas (protected for biodiversity conservation but limited logging allowed).

In order to gain access to the designated forest areas where logging is permitted, individuals or timber companies must be granted the right to do so. The state grants three types of permits that allow rights to log and harvest. The first is the Timber Utilization Contract, which grants the company or individual the right to harvest naturally occurring timber. Entities have to go through a competitive bidding process to gain such rights. The Ghana Forestry Commission recommends to whom such rights must be granted, then the Minister responsible for the sector signs the granting of the right, which has to be ratified by parliament. The second type of access rights is the Timber Utilization Permit, which allows the Forestry Commission to grant permission for the harvesting of a specified number of trees outside of a timber utilization contract area. Permit holders are only allowed to use these harvested timber for social or community purposes. The last type of access right is the Salvage Permit, issued for the purpose of salvaging trees in an area that is undergoing development such as road construction (Agyeman, Gyan, and Odruro 2007, 14-15).

Along with these permits, the state charges some fees for granting rights to timber at the point of ownership. It charges the concession rent with an annual fee charged per hectare of the concession area. The fee is slightly higher for on-reserve areas compared to off-reserve areas. The revenue is collected by the Forestry Commission and shared with the Office of the Administrator of Stool Lands, District Assemblies, Stools and Traditional Councils (Lund 2011, 632).

Key Sector Characteristic. The starting point for understanding the state's policy choice in the timber sector at the point of production is to look at the type of resource in

question. Timber is a natural resource. As an interviewee described to me during my field visit, “timber companies did not bring the trees to this earth with them.” The point of the interviewee was that for naturally occurring resources it only makes sense for the state to retain ownership rights since the state is the central public authority. Edwards and Steins (1998) point to the fact that when natural resources are placed in such a way that it allows access to multiple users, there is the potential for depletion in both quality and quantity since users will attempt to extract as much as they can at the expense of fellow users. Oakerson (1990) describes such resources are facing, among other challenges, the inability to exclude users from accessing the resource and thus the need for rules to govern the use of such resources. Even if users can design rules that govern use of such natural resources, such rules will have to be enforced, thus the importance of the role of a central public authority such as the state. Additionally, the stools who claimed the rights to the land as well as the trees (timber) prior to the state retaining the rights to the timber did so because the timber happened to be in an area the stool and their ancestors had settled. Timber is a natural resource to which no one could actually make a natural rights claim.

Enabling Factors. Historical antecedents have had a hand in shaping the retention of rights by the state to timber. Agyeman, Gyan, and Oduro (2007) provide a historical overview of the timber sector in which they show how the sector was dominated by mainly private actors—the chiefs, who were the custodians of the land or are the traditional authorities, and European merchants who dominated the timber trade during the pre-independence era. In the post-independence era, the state used its newfound

political power to reshape the timber sector. As Agyeman, Gyan, and Odoru (2007) observe, the state was driven in part by the increasing economic value of timber as an export commodity, as well as by the need to address the rapid rate of deforestation that was occurring.

Furthermore, the chiefs who had successfully resisted the colonial authorities during the pre-independence era had their power neutralized when the state asserted its political power and changed the rules of land ownership. As a result of indirect rule, the colonial government depended on both the educated elite as well as the traditional chiefs in administering the colony, which made the British a little more sensitive when trying to deal with certain local issues such as land ownership. The use of indirect rule appears to have contributed to a certain measure of success of the local chiefs in resisting local ordinances that especially had to do with land. The post-independence era changed that. In the immediate post-independence era, the state did not hesitate to use its power to neutralize the influence wielded by traditional authorities. That the immediate post-independence years witnessed mostly military rule or one-party civilian dictatorships also helped neutralize the traditional authorities. These political conditions made it easy for the state to act by decree and more difficult for the traditional authorities to resist. Although the history of the sector shows heavy private participation, it still has an element of state participation at the point of ownership. Timber rights historically were never vested in private hands. The stools, who had been vested with timber rights and were responsible for granting harvesting rights, are public authorities. In essence, they are

the traditional state at a very local level. The modern post-independence state, however, found ways to invest rights in timber to itself and not the stool.

At the point of ownership, the natural resource nature of timber, coupled with the use of political power to reshape relationships and other historical antecedents, have contributed to sustain this ownership arrangement in the timber sector. In the next section I will proceed to discuss the point of production in the timber sector, where the state does not set up a state-owned enterprise for the purposes of harvesting timber but rather outsources the process to private timber companies.

Timber at the Point of Production

Harvesting Timber. The harvesting of timber involves a number of key steps. I provide here a very quick overview of some of those steps. First of all, the tree is "felled," which simply means that the tree is brought down in a way that separates it from the tree stump. Once felling has occurred, the next step is the extraction, where the tree is moved to a landing site or an area in the forest reserve to prepare it for logging. Once extraction is complete, the next step is the processing. This is where the tree that has been felled is cut further into a number of logs. Once all the felled trees have been processed into logs, they are loaded onto a truck for transport to the sawmill. At the sawmill, the logs are processed through various stages of cutting and milling, ultimately transforming the tree felled in the forest to lumber. The last stage of processing at the mill is the drying. Sometimes woods products are air-dried or dried using a mechanical process. This complex process means that timber harvesting involves both heavy machinery as well as manual labor at each step of the process. Successful timber harvesting requires the ability

to raise the capital to finance the entire operation, like acquisition of heavy machinery, tractors, labor costs, etc.

Policy Choice: At the point of production, the state does not set up a state-owned enterprise to undertake timber harvesting. Instead, timber harvesting is carried out by private timber companies who are granted harvesting rights by the state.

State Actions: Timber companies go through an elaborate process required by law in order to begin timber-harvesting activities. The description that follows is a summary based on interviews, Forestry Commission documents, and descriptive work done by Paulus (2009).

All timber utilization contracts go through a process of public bidding. The state informs timber companies of the availability of concessions and puts these companies through a pre-qualification and a bidding process. The pre-qualification process requires the timber company to demonstrate a number of factors—operating plan for the logging, financial and technical capacity to engage in harvesting activities, how the company plans to address the social needs of the community in which it will operate, tax records, and the human resource capacity of the company. There is a Timber Rights Evaluation Committee that, together with the Forestry Commission, evaluates the applicants and pre-qualifies them. Companies who pre-qualify then are allowed to participate in the public bidding for the concession. A minimum price is set by a third party for the bids but concessions are awarded to companies that offer the highest annual timber rights fees.

Before the actual harvesting of the timber begins, the Forest Services Division of the Ghana Forestry Commission takes stock of all the trees in the area and creates a stock

list, from which it makes a determination of the total volume that can be harvested from the area. All the trees are marked with a number. The rules are as specific as diameter limits for species of trees, trees designated as normal species that are allowed to be harvested, restricted species that can only be harvested in low volumes, and protected species that are not allowed to be harvested at all. The trees are grouped into compartments and a period is specified during which harvesting is allowed in each compartment. Timber companies must keep a record of all trees harvested.

There are transportation procedures that timber companies must follow. The key transportation procedure involves the issuance of a Timber Conveyance Certificate, which allows the timber company to transport the logs from the forest area to the sawmill. There are forestry check points that ensure compliance with this provision. Timber can only be conveyed during the hours of 6 a.m. and 6 p.m.

Lastly, an important state action is the fiscal responsibility placed on the timber companies at the point of production. Timber companies have to pay a stumpage fee calculated based on specific volume and species. The revenue accrued from the stumpage fees is shared using a formula. From the total accrued, the Forestry Commission takes 50%. Of the remaining 50%, the Office of Administrator of Stool Lands first takes 10% in administration fees. The remainder is shared as follows: 25% to the stool, 20% to the Traditional Authority, and 55% to the District Assembly.

Key Sector Characteristic. State capacity is key to why timber harvesting is undertaken by private timber companies and not state-owned enterprises. In the resource sector characteristic survey, when asked about state capacity to engage in successful

timber harvesting, 76.3% of respondents agreed or strongly agreed that the state has the capacity to engage in the key activities in the timber sector. Among respondents affiliated with the public sector, 81.4% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 61.6% agreed or strongly agreed with the statement. When the results are examined by the years of experience with timber, 78.0% of those with five years or less of experience agreed or strongly agreed with the statement. 86.7% of those with 6-10 years of experience agreed or strongly agreed, while 71.0% of those with more than 10 years of experience agreed or strongly agreed with the statement. The percentages strongly suggest that the state has the capacity to engage successfully in the harvesting of timber. Even among respondents not affiliated with the public sector, there is a sense that the state has the capacity to engage successfully in timber harvesting. The results of the survey, however, were in sharp contrast to the views expressed during interviews as well as to other secondary information uncovered during the course of the research. During interviews the point was made that the state did not have the capacity to successfully engage in timber harvesting. The state was depicted as not being efficient enough and not having the technical know-how to be able to engage in the activities of the timber sector at the point of production. Additionally, the capital requirements needed to initiate and sustain timber operations were described as a burden the state could not shoulder. In order to make sense of the state capacity issue, a look at the historical participation of the state in timber harvesting is important. First of all, timber harvesting has been traditionally undertaken by private actors. As Agyeman, Gyan, and Odoru (2007) note, a look at the history of timber harvesting in Ghana reveals a trade

undertaken by private actors, whether European merchants or local Ghanaian businessmen. Prior to the state appropriating the rights to timber to itself, timber companies dealt mainly with the traditional authorities, who granted them harvesting rights to timber concessions. When the state took over the rights to the timber, the practice continued in which the state granted harvesting rights to timber companies. Historically, therefore, a political authority (traditional chiefs or the central government) has kept its role as the grantor of concessions while the timber companies have been the ones to do the harvesting. The state's participation in the timber sector at the point of production was restricted to ownership share in a timber company and was dictated politically. Agyeman, Gyan, and Odoru (2007) report the following:

> At Independence, 96% of all the timber concessions were held by expatriate companies, but the next couple of years the number of Ghanaians involved in the timber industry massively increased while average concession size decreased. One mechanism for increasing the number of Ghanaian contractors was the provision of interest free loans. Indigenization was, however, a limited strategy. In 1972 the National Redemption Council led by General I.K. Acheampong passed the Timber Operations(Government Participation) Decree to enable the government to acquire majority shares in some timber concerns. The Decree led to an unprecedented level of state involvement in the timber sector. With effect from the 1st October 1972 the Government acquired 55% of the equity capital of the largest concession holding operations in Ghana. Many of the remaining foreign interests in the timber industry were nationalized or transferred into Ghanaian interests (2007, 9).

The state was therefore a shareholder in timber companies as opposed to the key actor organizing a timber operation around the harvesting of timber. In the exceptional case where the state nationalized a timber company and took over the running of operations, the capacity of the state and its ability to successfully engage in timber operations proved insufficient. In an examination of the effects of nationalization of

foreign-owned companies, Adei (1987) looked at the performance of the Africa Timber and Plywood Company (AT&P), which was nationalized in 1976. Adei describes the condition of AT&P as follows:

> The factory has discontinued three of its eight production lines since nationalization; utilization of the factory has dropped to about 10% of its rated capacity; recovery rates (major indices of productivity in wood processing) have deteriorated markedly. By the end of 1983, the company, which had hitherto exported almost all of its output, had dropped out of the export market; total sales in 1983 were a fraction (less than 10% in real terms) of the pre-nationalization level. Except for one year when a meager GHC 63000 net profit was earned, the company has sustained persistent net losses; its total indebtedness stood at GHC 128.6 million at the end of 1984 (1987, xii).

The indebtedness of the company was the equivalent of $2.57 million in 1984. In 1995, the state divested itself of AT&P by selling its assets for a total of $3.5 million to Samartex Company. The state divested itself from another state owned timber company, Mim Timbers, in 2001 through a sale of assets totaling $5.5 million to a private entity for reasons similar to those that prompted the AT& P sale. Baker et al (1991) describe timber operations run by the state as follows:

> On the whole, most of the state-owned operations tended to be over-equipped and operated below capacity. Problems with administration and financial management were compounded by difficulties in production, management, maintenance and working capital for spare parts. Many machines tended to be cannibalized to provide spare parts for other operating machines. The government (state) was not effective in managing most of these companies and some managers lost or stole millions of dollars through loans and price fixing (1991, 9).

The survey data conflicts with information obtained from interviews and from other secondary sources. However, judging from the results of state nationalization of timber companies and the eventual privatization of them, it is safe to conclude that state

capacity is a major challenge and a key reason for the use of private companies for timber harvesting.

Enabling Factors. Aside from state capacity, the contribution to the economy enables the private nature of timber harvesting. The table below shows the contribution of timber to the economy. Using Tutu's (2011) formula of 60% of forestry and logging for timber, the data points from 2009-2012 are calculated using information from the Ghana Statistical Services.

Table 22: Timber's Contribution Towards Overall GDP, 1993-2012

Year	% Contribution Towards Overall GDP
1993	1.7
1994	1.6
1995	1.6
1996	1.6
1997	1.9
1998	1.9
1999	2.0
2000	2.1
2001	2.1
2002	2.2
2003	2.2
2004	2.1
2005	2.1
2006	2.1
2007	2.0
2008	1.9
2009	2.2
2010	2.2
2011	1.7
2012	1.5

Source of Data: Tutu 2011 and Ghana Statistical Services.

On average timber contributes about 2% to overall GDP. Obviously, a 2% contribution to the economy looks rather small. The contribution to the economy can be thought of in other ways. Timber harvesting is undertaken by private timber companies. In the table below I show the number of timber companies that applied for and obtained permits to engage in timber harvesting. The data represents timber companies that exported air-dried lumber.

Table 23: Number of Permit Holders (Timber Companies) for Timber Exports

Year	Number
1995	143
1996	132
1997	139
1998	150
1999	153
2000	159
2001	186
2002	188
2003	203
2004	183
2005	183
2006	158
2007	180
2008	157
2009	114
2010	113
2011	112

Source of Data: Ghana Forestry Commission, Forest Products Inspection Bureau.

In the period for which data was obtained, there is an average of about 156 entities or timber companies holding permits that allow them to export timber. Timber

companies, in order to harvest, process and export the various timber products, need labor and thus become an important source of employment. These workers earn salaries, which they spend on various goods and services. All these activities contribute in their own measure to the economy.

In looking at the fiscal regime imposed on the timber sector, another important contribution to the economy becomes apparent. There is a total of 3% export levy charged on wood exports.

Table 24: Earnings from Export Levy

Year	Total earnings (1% plus 2% export levy)
1995	$ 7,569,552
1996	$ 4,329,966
1997	$ 5,174,142
1998	$ 5,129,905
1999	$ 5,213,879
2000	$ 5,257,319
2001	$ 5,070,111
2002	$ 5,335,945
2003	$ 6,063,331
2004	$ 6,495,568
2005	$ 6,569,204
2006	$ 6,429,700
2007	$ 7,569,552
2008	$ 7,557,763
2009	$ 5,770,214
2010	$ 5,706,900
2011	$ 4,898,898

Source: This is calculated based on export permit data obtained from the Timber Industry Development Division using the 3% export levy charged on wood exports.

Another revenue avenue to explore as contribution to the economy is the stumpage fee charged on species-specific volume after the trees are felled. Hansen and Lund (2011, 632) estimate that stumpage fees can range between $2.60 and $56.00 per cubic meter. Using production data obtained from the Forest Products Inspection Bureau, I calculate the minimum and maximum revenue that can be derived from stumpage fees based on the range of fees provided by Hansen and Lund (2010). The table below shows the revenue potential from stumpage fees.

Table 24: Earnings from Stumpage Fees

Year	Total volume (m^3)	Minimum ($ US)	Maximum($ US)
1995	1,102,203	2,865,728	61,723,377
1996	1,166,405	3,032,653	65,318,680
1997	1,202,893	3,127,521	67,362,008
1998	1,147,565	2,983,670	64,263,676
1999	1,102,203	2,865,728	61,723,377
2000	961,418	2,499,686	53,839,410
2001	1,211,840	3,150,786	67,863,085
2002	1,104,351	2,871,313	61,843,671
2003	919,969	2,391,921	51,518,314
2004	756,913	1,967,976	42,387,182
2005	735,074	1,911,193	41,164,174
2006	708,957	1,843,289	39,701,610
2007	681,479	1,771,847	38,162,875
2008	680,754	1,769,961	38,122,240
2009	539,340	1,402,284	30,203,040
2010	641,727	1,668,491	35,936,741
2011	720,225	1,872,587	40,332,651

Source of Data: Calculated based on log production data from Forest Services Division

One more revenue stream to highlight within the context of contribution to the economy is the revenue generated from air-dried lumber. This is a levy charged on all export consignments of air-dried lumber and applies to nine wood species. The charge ranges between 10% and 30% of declared FOB export price of the consignment depending on the particular species (Hansen and Lund 2011, 632). In the table below, I calculate the minimum and maximum that can be earned from air-dried lumber based on data obtained from the Forest Products Inspection Bureau of the Ghana Forestry Commission.

Table 25: Earnings from Air-Dried Lumber

Year	Total volume (m^3)	Minimum 10% of total value ($ US)	Maximum 30% of total value ($ US)
1995	194,067	7,527,425	22,582,275
1996	140,297	4,889,759	14,669,277
1997	142,391	5,194,771	15,584,315
1998	118,622	4,458,473	13,375,419
1999	117,137	4,254,831	12,764,494
2000	93,279	2,904,141	8,712,423
2001	94,184	2,965,692	8,897,077
2002	90,351	3,146,085	9,438,257
2003	80,512	3,303,249	9,909,749
2004	94,139	3,759,276	11,277,830
2005	127,059	5,033,225	15,099,675
2006	92,837	3,809,452	11,428,357
2007	81,669	3,413,005	10,239,016
2008	70,046.	2,799,897	8,399,692
2009	50,074	2,138,184	6,414,552
2010	51,258	2,257,197	6,771,592
2011	42,766	2,074,095	6,222,287

Source of Data: Calculated based on log production data from Forest Services Division

These three revenue streams—stumpage fees, export levy, and air-dried lumber levy—are important sources of domestic revenue to the state. So beyond the percentage that the sector itself contributes to GDP, there are other important effects on the economy, such as revenue generation. In the survey, 64.9% of respondents agreed or strongly agreed that timber is a major contributor to the economy of Ghana. Among respondents affiliated with the public sector, 62.7% agreed or strongly agreed with this statement. Among respondents not affiliated with the public sector, 79.1% agreed or strongly agreed with the statement. When the results are examined by the years of experience with the timber sector, 68.0% of those with five years or less experience agreed or strongly agreed with the statement. 73.3% of those with 6-10 years of experience agreed or strongly agreed, while 54.8% of those with more than 10 years of experience agreed or strongly agreed with the statement. Generally a majority of respondents agree that the timber sector contributes to the economy of the country. Considering the economic contribution from the sector, the policy choice has to be the one that allows the sector to flourish and the state to maximize benefits. If a state-owned enterprise was in a position to ensure that, then it is possible to see the state itself undertaking the harvesting of timber. However, as the historical recounting of state participation in timber harvesting has shown, the state has failed to demonstrate that it has the capacity to do so effectively and therefore the use of private actors is the viable alternative.

Another enabling factor is the presence of alternative actors. At the point of production, if the state chooses not to set up a state-owned enterprise, then who will

harvest the timber? In an environment where there are alternative actors who can carry out the activities in a way that does not threaten potential benefits, the state will turn to those alternative actors. That is the case in the timber sector. Again, the history of the sector recounted above shows participation by private actors. Also, a look at the export permit report from 2012, for example, shows a total of 160 exporters getting permits to export timber. As of 2008, Paulus (2009) points to a total of 105 registered sawmills. The presence of alternative actors upon whom the state can rely upon for the harvesting of timber is not to be understood as the state possessing the capacity but choosing to use alternative actors instead. The key takeaway is that the state's move to nationalization timber firms in the 1970s and the subsequent failure and sale of nationalized firms to private actors points to the inability of the state to successfully run a timber harvesting company. It is because of the state's demonstrated failure in the years it seized control of timber companies compared to the generally successful harvesting of timber by private companies that leads me to point to alternative actors as enabling the state's choice. The state, due to its limited capacity, can afford to contract out because there are alternative actors with the capacity to successfully harvest timber at the point of production.

Timber at the Point of Sale

Policy Choice: At the point of sale in the timber sector, the state uses primarily a quasi-price-fixing mechanism to extract rents from the sector. The state (the timber industry development division of the Ghana Forestry Commission) issues a minimum guiding selling price for all wood species that are exported. The minimum guiding selling price is based on market intelligence and research.

State Actions: The Forestry Commission Act, 1999, Act 571 established the Ghana Forestry Commission and the various divisions within the commission. The Act, in Section 10(2)(b), provided for the Timber Export Development Division and the Forest Products Inspection Division. In Section (10)(5), the Act leaves the determination of the functions and numerical staff strength of each division to the Commission. As per the commission, the Timber Export Development Division and the Forest Products Inspection Division were merged in 2002 to create the Timber Industry Development Division, with the following functions dealing with the point of sale:

a. establish guiding price systems for the vetting of contacts of export of wood products; and

b. publish market intelligence in order to inform industry, government and public regarding pricing, trade and product trends that could impact the sector.

Against this backdrop, the Timber Industry Development Division has a guiding selling price Committee. The committee consists of representatives of the key timber associations, in particular the Ghana Timber Millers Organizations (GTMO), Furniture and Wood Products Association of Ghana (FAWAG) and key technical persons from the operations departments of Timber Industry Development Division (TIDD). To determine the guiding selling price, the committee gathers relevant market intelligence information from sources such as the Ghana Forestry Commission's London office, the International Tropical Timber Organization (ITTO) website, historical data from already approved timber contracts, and personal interviews with key buyers and exporters. Based on this

market intelligence and research, prices are issued based on type of wood, specific species within the wood type, the grade and quality, the volume, etc. The guiding selling price is reviewed on a quarterly basis. The prices are actually guiding prices that accommodate lower and upper limits of prices of wood products. Usually, wood prices are negotiated between buyers and sellers based on the price guide, but are not expected to vary much from the lower levels of the achievable prices. To ensure compliance, timber products transactions between buyers and sellers are done through the Ghana Hardwood Contract of Sale and are vetted and approved by TIDD. The Contract & Permit Department of the Timber Industry Development Division makes it a point to note the following regarding the prices to timber exporters:

> The prices are meant to guide you in taking informed decisions whilst in negotiations with your prospective overseas buyers. We are willing to offer our expert advice in taking decisions on prices where you decide to involve us. Meanwhile, you must be mindful of your production cost and other relevant factors, such as species, nature of product, specification, quality or grade, destination, competition, freight, etc., when negotiating prices. If we are able to achieve higher prices, that is fine for all of us as a nation. We therefore count on you to be able to negotiate well to get the best value for Ghana's forest resources. For that matter, your negotiations on prices should also take account of the present precarious situation of our forest resources, particularly the traditional timber species that are threatened with extinction. (Price Guide, April to June 2013, 1).

Key Sector Characteristic. During my field research, I inquired from the Timber Industry Development Division the rationale for this pricing policy. Although very cryptic in their responses, the three well-informed persons I spoke with in the division all pointed to the revenue maximization imperative as the driving force for this rent-extraction mechanism. To them the guiding selling price was a way to maximize revenue from timber exports. In the survey, on the question of the state dependence on the sector, 52.0% of respondents

agreed or strongly agreed that the state is dependent on the resource sector. Among respondents affiliated with the public sector, 55.9% agreed or strongly agreed with this statement. Among respondents not affiliated with the public sector, 48.5% agreed or strongly agreed with the statement. When the results are examined by years of experience, 50.0% of those with five years or less experience agreed or strongly agreed with the statement. 53.3% of those with 6-10 years of experience agreed or strongly agreed, while 53.1% of those with more than 10 years of experience agreed or strongly agreed with the statement. The survey shows at least 50% of respondents agreeing or strongly agreeing that the state depends on the sector for the revenue, especially export revenue. The assertion that maximizing revenue is the reason for the guiding selling price is supported in part by the survey data, where respondents seem to suggest that the state depends on the timber sector for export revenue. In the table below I look at export earnings from the timber sector.

Table 25: Export Earnings from Timber

Year	Export Earnings (US$ millions)	% share of export earnings
1986	44.1	5.8
1987	89.8	10.9
1988	106.2	12.1
1989	80.2	9.9
1990	118.0	13.1
1991	124.2	12.5
1992	113.9	11.5
1993	147.4	13.9
1994	165.4	13.4
1995	190.6	13.3
1996	146.8	9.3
1997	172.0	11.5
1998	171.0	8.2
1999	174.0	8.7
2000	175.2	9.0
2001	169.3	9.1
2002	182.7	8.8
2003	174.7	6.8
2004	211.7	7.8
2005	226.5	8.1
2006	199.5	5.4
2007	250.1	6.0
2008	316.8	6.0
2009	179.8	3.1
2010	189.5	2.4
2011	165.7	1.3

Source of Data: ISSER, State of Ghanaian Economy.1992,1997,2002,2007,2012

From the years of data available, in terms of export revenue, timber has contributed about $164.8 million on average to the state and about 8.8% on average of total export earnings. This is especially important because in addition to two other commodities (cocoa and gold) and prior to the discovery of oil, timber has traditionally been the state's third-most important export commodity. The uses to which the earned

foreign exchange is put to are many. In the table below I provide an example of the contribution of timber export revenue to the payment of the interest on the external public debt of the country.

Table 26: Foreign Exchange Generated by the Timber Industry as Contributions to Interest Payments on Ghana's External Public Debt (Outstanding): 1984-1991 (US $ millions)

End Year	Principal	Interest	Revenue from Timber Exports
1984	64.6	29.2	21.0
1985	67.2	30.5	28.0
1986	79.3	42.6	44.0
1987	102.1	53.8	90.0
1988	138.4	69.2	107.0
1989	147.4	59.5	81.0
1990	139.5	67.3	119.0
1991	224.0	119.2	114.2

Source of Information: Owusu, 2012.

As seen from the table above there is an important contribution that the timber sector makes to the state in terms of not only the foreign exchange that is earned but also the many uses to which the earned foreign exchange is put. It therefore makes sense that the state will ensure that it maximizes the revenue it can get from timber exports through the use of a minimum guiding selling price. It is important to note that although timber companies are allowed to sell privately, the sale has to be vetted by the state for compliance with the minimum guiding selling price. The state therefore does not have to necessarily be the buyer of all timber from timber companies in order to maximize its revenue during rent extraction so long as it has a way to influence the pricing mechanism.

Enabling Factors. An important enabling factor for this method of rent extraction is the protection of medium- and small-scale timber exporters. The Timber Industry Development Division asserts that these small- and medium-scale exporters do not have the capacity to do extensive market surveys necessary to calculate competitive prices during negotiation with prospective buyers. The use of the ,guiding selling price ultimately helps the exporters by ensuring that they do not negotiate prices below the prevailing market price or price themselves out of the market. This is very important when viewed against the fact that the state depends on timber for important rents, which means that if timber companies negotiate lower prices or price themselves out of the market, rent extraction is threatened. From the 2012 export permit report from the Timber Industry Development Division, the top twenty exporters of timber accounted for 69.9% of the total exports. This seems to suggest that the concern is for the remaining 31% of total export accounted for by the other exporters. The point is better illustrated through an in-depth analysis of the export patterns. This example is based on the export of one particular category (air-dried lumber). It is also the timber species with the highest number of exporters, a total of 112 in 2012. The table below shows the number of exporters accounting for the total volume of air-dried lumber exported in 2012.

Table 27: Export Volume of Air Dried Timber By Number of Exporting Companies

Total Volume(m^3)	Number of Exporting Companies	% of Volume Exported
1,000 and above	11	9.8
500-999	14	12.5
100-499	41	36.6
Less than 100	47	42.1

Source of data: Timber Industry Development Division, Export Permit Report.

The table above demonstrates the point of the need to protect the small- to medium-scale exporters. The 87 companies exporting a total of the 78% of air dried lumber is the key group, it appears, and drives the concern of protection and the importance of the guiding selling price. The 87 companies export an average of 133.58 m^3 compared to the 14 companies in the above table who export an average of 733.55 m^3 or the 11 companies who export an average of 1923.31 m^3.

The nature of the actors involved in the timber export trade is another important factor that sheds further light on why the state adopts the pricing mechanism it does at the point of sale in the timber sector.

Table 28: Export Destinations of Timber from Ghana

Region	% of total volume	% of total value
Europe	19.98	29.04
Asia/Far East	16.08	14.16
Africa	50.87	37.50
Middle East	9.12	11.18
America	3.91	8.03
Oceania	0.04	0.08

Source: Forest Products Inspection Bureau. 2011 Export Permit Report

The table above shows the destination for all timber/wood products exported from Ghana. As the table shows, timber exporting companies deal with buyers from all the over the world who operate as importers, wholesalers, distributors or manufacturers. The timber companies, therefore, are not dealing with a single buyer of their commodity, unlike the cocoa farmers who are dealing with just the state. In an environment of multiple buyers from around the world, and where the timber companies negotiate their own export contracts, the timber companies need up-to-date market intelligence in order to negotiate successfully with each buyer they encounter. Gathering the needed market intelligence can prove burdensome to the timber company. Therefore, given the state's interest in maximizing revenue generated from timber exports, compounded by the nature of the actors involved in the buying and selling of timber, one can see why the guiding selling price becomes an important mechanism in the timber export trade. The survey respondents affirm the state's capacity to gather this market intelligence. In the survey, 80.4% of respondents agreed or strongly agreed that the state has the capacity to engage in the key point of sale activities in the timber sector (e.g. marketing and export). Among respondents affiliated with the public sector, 81.0% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 75.8% agreed or strongly agreed with the statement. When the results are examined by the years of experience with the timber sector, 83.7% of those with five years or less experience agreed or strongly agreed with the statement. 80.0% of those with 6-10 years of experience agreed or strongly agreed, while 75.0% of those with more than 10 years of experience agreed or strongly agreed with the statement.

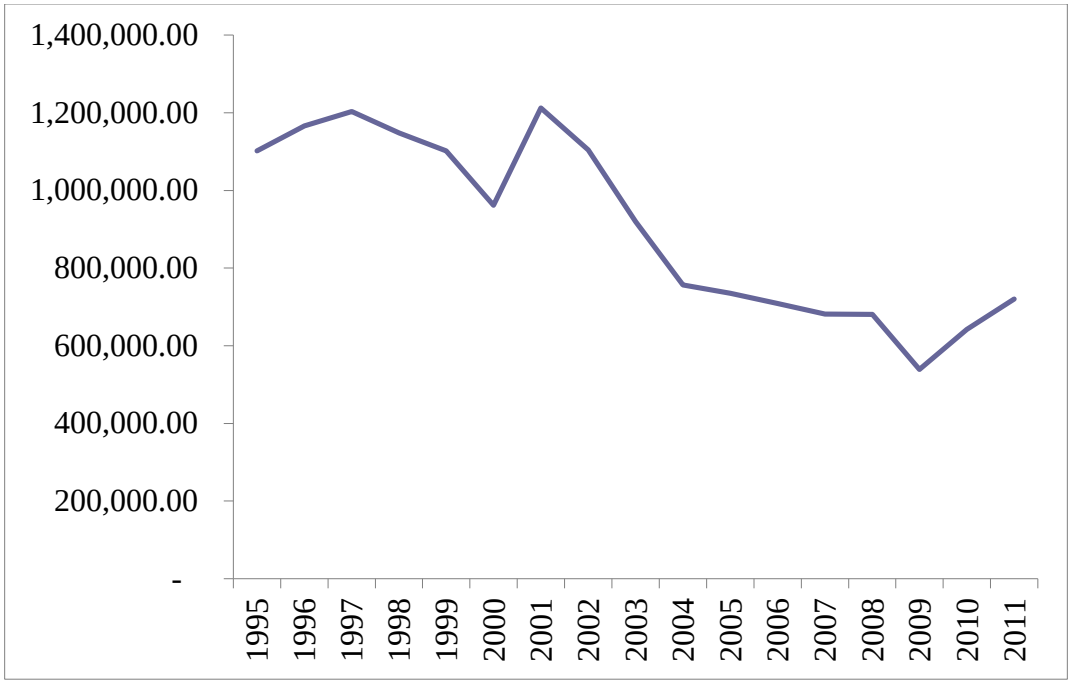
Also, the state has historically used some form of pricing to extract rent from the timber sector. The Timber Industry and Ghana Timber Marketing Board (Amendment) Act, 1977, a decree of the Supreme Military Council government, established the Timber Marketing Board. Among the many functions of the board, it was charged with serving as the sole exporters of timber and timber products as well as given the right to fix the prices of timber and timber products for export and domestic sales. As Owusu (2012) notes, the decree "enabled the timber marketing board to control the production and trade of the export-oriented sawmills. The contracts of almost 94% of Ghana's timber exports had to be first approved by the board and had to correspond to a minimum price level which was calculated in relation with trends on the world market" (2012, 66). After the dissolution of the Timber Marketing Board, which was replaced by the Timber Export Development Board, the state still had a role to play at the point of sale in terms of price through this new institution.

Other Points to Note. The resource sector characteristic survey revealed a few insights of the well-informed persons associated with the sector. Those insights did not emerge in interviews and did not have much in terms of support of secondary data. However, they provide important insights into the timber sector so they are noted here as well. On the question of the extent of state investment in the sector, only 48.5% of respondents agreed or strongly agreed that the state invests a lot of resources in the timber sector. Among respondents affiliated with the public sector, 50% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 42.4% agreed or strongly agreed with the statement. When the results are examined by the years of experience of

respondents with the timber sector, 40.8% of those with five years or less experience agreed or strongly agreed with the statement. 66.7% of those with 6-10 years of experience agreed or strongly agreed, while 50.0% of those with more than 10 years of experience agreed or strongly agreed with the statement. There is disagreement on this statement when it is examined by the number of years respondents have been affiliated with the sector. In examining the budget data obtained as part of this study and comparing it to, for instance, the cocoa sector, one does not see the kind of state investment in the timber sector as one sees in the cocoa sector. For example, in the cocoa sector we see the state making investments such as rehabilitation of cocoa feeder roads, provision of seedlings to farmers, mass spraying of cocoa farms, and other extension services. While the state offers periodic incentives such as waiving the import tax on equipment for timber harvesting or a tax break for other purposes, the extent to which it makes substantial investments in the timber sector is not in any measure comparable to what occurs in the cocoa sector. The state, however, is responsible for forestry management and employing forest officers who check, among other things, illegal activities even in forest areas granted to private timber companies as concessions.

On the question of the long-term reliability on the sector, 32.6% of respondents agreed or strongly agreed that the state will be able to rely on timber for the long term development needs of Ghana. Among respondents affiliated with the public sector, 36.8% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 31.2% agreed or strongly agreed with the statement. When the results are examined by the years of experience of respondents with the timber sector, 33.3% of

those with five years or less experience agreed or strongly agreed with the statement. 33.3% of those with 6-10 years of experience agreed or strongly agreed, while 32.3% of those with more than 10 years of experience agreed or strongly agreed with the statement. The low percentages reflecting concerns over the long-term reliability of the sector emerged in interviews in which well-informed persons expressed concerns about the rate of depletion and in general the problem of deforestation. An elderly woman I spoke with in Kumasi, one of the major cities in Ghana, expressed it this way: “the timber is finished, the timber companies have harvested all of the timber” (a loose translation since she spoke in one of the local dialects). The reliability concerns are borne out by looking at the volume of timber produced over the years. Bear in mind that the total volume is a reflection of the total number of trees harvested and the number of logs obtained. The figure below shows the total volume of timber in cubic meters over a number of years. A close look at the graph shows a generally downward trend in timber production. This ordinarily would give pause to the state when the issue of the long-term reliability of the sector is in question.



Source of Data: Timber Industry Development Division.

Figure 3: Total Volume (Cubic meters) of Timber Produced, 1995-2011

The role of the international donor in shaping the policy choices of the state in the sector did not emerge as a particular sector characteristic. From the survey, 51.5% of respondents agreed or strongly agreed that the international donor community (World Bank, IMF, etc.) has a great influence on the policies adopted in the timber sector. Among respondents affiliated with the public sector, 53.4% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 45.5% agreed or strongly agreed with the statement. When the results are examined by the years of experience with the timber sector, 44.9% of those with five years or less experience agreed or strongly agreed with the statement. 80.0% of those with 6-10 years of experience agreed or strongly agreed, while 46.9% of those with more than 10 years of

experience agreed or strongly agreed with the statement. There is a divergence of perception regarding the role and influence of international donors on the policies adopted by the state in the timber sector but in general that influence is doubted. The perception is a reflection of the episodic nature of the involvement of the donor community. During the World Bank/IMF-supported Economic Recovery Program, donors supported some of the initiatives that were taken in the timber sector.

On the question of the influence of stakeholders, 48.5% of survey respondents agreed or strongly agreed that the timber sector has stakeholders who are able to successfully influence state policy on timber. Among respondents affiliated with the public sector, 53.4% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 39.4% agreed or strongly agreed with the statement. When the results are examined by the years of experience with the timber sector, 40.0% of those with five years or less experience agreed or strongly agreed with the statement. 60.0% of those with 6-10 years of experience agreed or strongly agreed, while 54.8% of those with more than 10 years of experience agreed or strongly agreed with the statement. The sector has two main trade associations, the Ghana Timber Association and Ghana Timber Millers Organizations; however, the extent of their influence was not apparent. I interviewed the president of the Ghana Timber Association, who focused on the challenges facing the industry with no indication of how influential the organization is.

Timber Sector Choices and the Material Well-being of Workers in the Sector

As discussed in the chapter on cocoa, the secondary line of inquiry in this dissertation looks at the consequences of state policy choices on the material well-being

of those whose everyday livelihoods depend on work in the sector. In the case of the timber sector, my primary interest is the material well-being of workers who are involved in the harvesting, the transporting, etc. of the logs from the forest. How do the state's policies affect the material well-being of these workers? I looked at it from the point of sale and the rent-extraction mechanism. I argue that the timber worker does not encounter the state directly at the point of sale, since rents are extracted from the timber company by whom he or she is employed. What happens in the case of the timber worker, then, is that the timber company passes on the effects of extracted rents to its workers in the form of lower wages. The other dimension of the material well-being of interest to me is the extent to which timber workers have access to basic facilities and institutions to address key education, economic, and political needs. In this section, I discuss impact of rent extraction on the material well-being of timber workers. The data is based on a survey of timber workers in two towns in the Western Region. The information is limited to the experience of those workers in the two towns and is being used here for illustrative purposes to gain a sense of the consequences of state policy choices. I will first describe the demographics of the workers and then proceed to describe various aspects of their well-being examined in the survey. The table below highlights the key demographic characteristics of the respondents to the survey.

Table 29: Demographic Profile of Timber Workers in Sambreboi and Takoradi, Western Region, Ghana

Demographic Characteristics	Percentage
Length of time in timber industry	
Less than a year	10.1
1-5 years	31.8
6-10	22.7
11-15	20.0
16-20	13.6
More than 20 years	1.8
Gender	
Male	82.6
Female	17.4
Education	
Some middle school/junior high school	20.0
Some secondary school	19.1
Secondary school completed	19.1
Primary school completed	15.5
Marital Status	
Married	61.8
Single	21.8
Cohabitation	10.9
Head of Household	
Yes	80.9
No	19.1
Religion	
Christian groups/denominations	84.5
Muslim groups/denominations	9.1
None	3.6
No. of Children	
1-5	60.9
0	27.3
Average Age	37.5
Median Age	37.0

There are three key areas I want to point out in the above table. The first is the predominance of men in the timber sector in the two towns surveyed. The second is the level of educational attainment among the workers surveyed, which suggests this is a

sector employing a lot of low-skill workers. The last is the length of time working in the sector, which shows that for most of the workers surveyed, their work in the sector has spanned several years.

I will now proceed to examine a number of aspects of their material well-being. The table below reflects the self reported monthly household income of the timber farmers surveyed.

Table 30: Monthly Household Income of Timber Workers in Sambreboi and Takoradi, Western Region, Ghana

Amount (GH₵)	US Dollar Equivalent	% Timber Workers
Less than 100	55.90	13.8
101-200	56.40-111.70	50.5
201-300	112.30-167.60	22.9
301-400	168.20-223.50	5.5
401-500	224.00-279.30	5.5
Above 500	279.30	1.8

About three-quarters of timber workers responding to the survey indicated earning 100-500 Ghana cedis (equivalent of about $50-$250) a month. The remaining quarter is split into two income groups: 1.8% earn more than 500 Ghana cedis (equivalent of about $279) a month and another 13.8% earn less than 100 Ghana cedis (equivalent of about $55 dollars). Again I use the two indicators—extreme poverty determined by looking at the percentage of people who live at or below an income level of $1.25 a day and poverty determined by the percentage of the population who live at or below a level of $2.00 a day. From the table above I calculated the high end and low end of the ranges by dividing

the dollar equivalent of the household income by 30 days. In the table below I show the percentage of timber workers living within a certain dollar-per-day range.

Table 31: Household Income Per Day for Timber Workers in Sambreboi and Takoradi, Western Region, Ghana

	Dollars per day	
Percentage of Timber Workers	**Lower end**	**Upper End**
13.8	1.90	n/a
50.5	1.90	3.70
22.9	3.70	5.60
5.5	5.60	7.40
5.5	7.50	9.30
1.8	9.30	n/a

Using the standard of living at or below $1.25 a day for extreme poverty and at or below $2.00 per day, I examine this scenario as a way of demonstrating the impact that state policy has on the material well-being of timber workers and their households. Take for instance the 13.8% of timber workers in the above table whose dollar-per-day household income is $1.90. If one of these workers heads a household of three (the worker, spouse, and one child), it means that each of these individuals have at their disposal $0.63 per day, putting all 13.8% in extreme poverty. If we apply the same logic of three household members to the 50.5% with household income falling between $1.90 and $3.70, each household member receives anywhere between $ 0.63 and $1.23, putting them in a situation of extreme poverty. If we apply the same logic of three members per the household to the 22.9% with per day household income falling between $3.70 and

$5.60, each household member receives between $1.20 and $ 1.90 per day, putting them in a situation of poverty. This means that 64.3% of timber workers and their households potentially live in extreme poverty with another 22.9% living in poverty. In 2012, when this survey was conducted, the daily minimum wage in Ghana was $2.65. Using the daily minimum wage in Ghana as a reference point, it exacerbates the poverty situation of timber workers and their households. From Table 31, and using again a household of three, this means that at least 87.2% of timber workers and their households live below the daily minimum wage. Living wages are beyond the scope of this study, but given the economic challenges in Ghana, most of the workers represented in the table above will face economic challenges on a day-to-day basis.

Table 32: Basic Living Conditions of Timber Workers in Takoradi and Sambreboi, Western Region, Ghana

Need	**Source**	**%**
Source of drinking water	Tap water	82.7
Source of bathing water	Public tap/stand pipe	66.4
Toilet type	*Kumasi Ventilated Improved Pit* Latrine (KVIP)	58.2
Toilet status	Public	67.3
Source of energy	Electricity	99.1
Source of cooking fuel	Charcoal	56.9
Use and own mobile phone	Yes	90.0

The table shows the basic living conditions of timber workers in the survey area. Almost all timber workers have access to electricity. The 56.9% of workers who cite

charcoal as their source of cooking fuel is supplemented by another 21% who use gas. Timber workers have tap water as their source of bathing and drinking water. A great percentage (90%) of them own and use a mobile phone, which allows for ease of communication. While their toilet type is public, the KVIP is an improvement over the open pit latrine. All in all, the basic living conditions of the timber workers show a lot of bright spots. I must point out that of the two towns surveyed, Takoradi is a major city whiles Sambreboi is urban in outlook. Thus, facilities such as tap water and standing pipes are not rare occurrences in these type of geographical settings.

Addressing Education Needs. The table below represents the presence of educational facilities available to the surveyed workers. The table shows that from the pre-school level to the polytechnic level (a tertiary level institution), there are accessible facilities timber workers can use to address their education needs. The survey shows little use at the junior high school level and above. Those percentages must be interpreted within the context of whether the workers have need of those facilities. What the survey did not do is to find out whether workers have children who would like to access those facilities but are unable to for whatever reason.

Table 33: Facilities Used to Address Educational Needs by Timber Workers in Takoradi and Sambreboi, Western Region, Ghana

Facility	Exists?	Accessibility	Use Pattern
Nursery school	Yes	Walk	50%
Primary school	Yes	Walk	62.7%
Junior High School	Yes	Walk	27.3%
Senior High School	Yes	Public bus	16.4%
Technical/Vocational	Yes	Public bus	2.7%
Polytechnic	Yes	Public bus	2.7

Addressing Health Needs. The table below represents a list of facilities timber workers can access to address their health needs. The data gathered from the survey shows that these facilities exist and are accessible. The use pattern also shows that timber workers draw on both private and public facilities to address their health needs.

Table 34: Facilities Used to Address Health Needs by Timber Workers in Takoradi and Sambreboi, Western Region, Ghana

Facility	Exists?	Accessibility	Use Pattern
Clinic (government)	Yes	Public transport	35.5%
Clinic (private)	Yes	Public transport	53.6%
Hospital (government)	Yes	Public transport	53.6%
Hospital (private)	Yes	Public transport	59.1%
Traditional healer	Yes	Public transport	7.3%
Polyclinic	Yes	n\a	n\a

Addressing Economic Needs. In the table below I look at how timber workers surveyed address their economic needs for food, transportation, and other financial needs. Trade stores are petty trading stores in which timber workers can get basic food items, and the survey shows a high use pattern among timber workers. Financial institutions are present,

with timber workers utilizing rural banks more often than private banks. The lack of a railway stop is not unusual since the rail infrastructure in the country is virtually non-existent.

Table 35: Facilities Used to Address Economic Needs by Timber Workers in Takoradi and Sambreboi, Western Region, Ghana

Facility	Exists?	Accessibility	Use Pattern
Trade stores	Yes	Walk	100%
Fresh produce markets	Yes	Walk	99.1%
Rural bank	Yes	Public transport	78.2%
Private bank	Yes	Public transport	39.1%
Money lender	Yes	Walk	6.4%
Public transport stop	Yes	Walk	98.2%
Train station	No	n\a	n\a
Market Stalls (selling groceries and/or clothing)	Yes	Public transport	99.1%

Addressing Security Needs. The table below looks at how timber workers address their security needs in case of fire or criminal activity. As the table shows, the police station is the facility used to address security needs by 45.5% of workers. A fire station is only utilized in the event of fire, so the low use pattern is expected.

Table 36: Facilities Used To Address Security Needs by Timber Workers in Takoradi and Sambreboi, Western Region, Ghana

Facility	Exists?	Accessibility	Use Pattern
Police station	Yes	Walk	45.5
Fire station	Yes	Public transport	5.5
Neighborhood watch	No	n\a	n\a

Addressing Governance Needs. Timber workers, just like other citizens, have governance needs and require avenues to bring those needs to the attention of state officials. In the table below I highlight a few key government institutions on which timber workers can draw to address various governance needs.

Table 37: Facilities Used To Address Governance Needs by Timber Workers in Takoradi and Sambreboi, Western Region, Ghana

Facility	Exists?	Accessibility	Use Pattern
Court house	Yes	Public transport	15.5%
Chief palace	Yes	Walk	49.1%
District Assembly Office	Yes	Public transport	37.3%
Gov't Dep't/ agency office	Yes	Public Transport	51.8%
Political party office	Yes	Public transport	24.5%

There is no question about the presence of facilities that timber workers can draw on to address their governance needs. Additionally, those facilities appear to be accessible. Among the list of facilities that can be used to address governance needs, the chief's palace is used by almost half of timber workers. The high percentage use pattern in relation to a government department or agency is a reflection of the numerous contacts that timber workers have with the state at the point of production. For example, forestry officers are present to check timber harvested and assess stumpage fees. Also they encounter state officials as they transport the harvested timber to their respective sawmills where they must go through forestry check points. Political party offices are utilized by only about a quarter of timber workers, which is low and therefore raises questions about the channels through which certain political needs are advocated for by

the timber workers. At the same, timber workers are unionized which means they have other avenues through which their interest may be represented.

To sum up, rent extraction from the timber sector has poverty implications for timber workers. Other factors drive poverty, which I acknowledge, but just like the cocoa farmer, the timber worker is dependent on salary earned from working for a timber company. The timber workers' basic living conditions show bright spots. The existence of schools and hospitals and governance institutions in these two town means that there is a certain amount of social provision that timber workers can use to address their education, health, economic and governance needs.

Summary of Key Points from the Timber Sector

1. The policy choices are the following: state retention of the rights to timber; no state enterprise for the harvesting of timber but instead the use of private timber companies; and the use of guiding selling price as the primary mechanism for extracting rents from the timber sector.

2. There are several characteristics driving policy choices in the timber sector, including the fact that timber is a natural resource; state capacity is limited in successfully undertaking timber harvesting; and revenue maximization concerns as well as historical antecedents.

3. The policy choices also carry with them implications for the material well-being of timbers workers as there are trappings of poverty and basic living conditions.

In the next chapter, I proceed to discuss the gold mining sector. In the chapter, I will discuss the key policy choices along the three dimensions—ownership, production, and sale. I will describe the key sector characteristics shaping the policy choices and the implications of those policy choices.

Chapter 5: Gold Mining—Why the State Does What it Does, and the Consequences

In this chapter, I show the key reasons for the different policy choices of the state in managing gold along three key dimensions—point of ownership (where the state retains ownership rights), point of production (where the state does not set up a state enterprise for mining gold), and the point of sale (where the state does not use price-fixing mechanism for the purposes of rent extraction). I will explain the following regarding the policy choices of the state.

1. That at the point of ownership the type of resource coupled with the land tenure system sustains the state's policy of retaining rights to gold.
2. That at the point of production state capacity coupled with contribution to the economy and the presence of alternative actors sustains the state's policy of contracting out gold mining to private gold-mining companies.
3. That at the point of state the lack of a foreign exchange imperative coupled with the nature of gold and its pricing, historical antecedents, and the policy choice at the point of production explains the state's policy choice of not using a pricing mechanism as the primary mechanism for extracting rents from the sector.

Gold at the Point of Ownership

Policy Choice. At the point of ownership, the state retains the rights to gold. The Minerals and Mining Act of 2006 states that "every mineral in its natural state in, under or upon land in Ghana, rivers, streams, water-courses throughout the country, the exclusive economic zone and an area covered by the territorial sea or continental shelf is the property of the Republic and is vested in the President in trust for the people of Ghana" (Minerals and Mining Act 2006, Act 703, Section 1). Furthermore, the constitution's Article 257(6) states clearly "every mineral in its natural state in, under or upon any land in Ghana, rivers, streams, water courses throughout Ghana, the exclusive economic zone and any area covered by the territorial sea or continental shelf is the property of the Republic of Ghana and shall be vested in the President on behalf of, and in trust for the people of Ghana." It must be noted that the state only owns the rights to the minerals such as gold. As Ayiteh, Kidido, and Tudzi (2011, 32) state, "the surface rights to land are publicly and privately owned in Ghana. This is significant, considering the fact that about 80% of the lands in Ghana are privately held. These surface rights include farming rights, right to build, right to possess and enjoyment of economic trees, both natural and artificial, right to alienate, etc."

State Actions. Since the state retains ownership rights to gold there are entry barriers set up at the point of ownership and rules that dictate how one gets access to the mineral. At the point of ownership, there are two types of access the state grants to mining companies. The first type of license is the reconnaissance license, which

> confers on the holder the right to search for a specific mineral (or commodity) within the licensed area by geochemical and photo-geological surveys or other remote sensing techniques. Except as otherwise provided in the license, it does

> not permit drilling, excavation or other sub-surface techniques. The license is normally granted for up to 12 months and may be renewed once only by the Minister responsible for mines for a period not exceeding 12 months upon an application by the holder. The application for renewal must be made at least three months before the expiration of the initial term of the license. The size of the area over which a reconnaissance license may be granted is limited to 5,000 contiguous blocks or 1,050 km² (see http://www.eservices.gov.gh/ MINCOM/SitePages/MINCOM-TypeOfRights.aspx).

The second type of access is a prospecting license, which

> gives the holder the exclusive right to search for specific minerals (or commodities) by conducting geological, geophysical and geochemical investigations to determine the extent and economic value of any deposit within the licensed area. Drilling, excavation or other sub-surface techniques are permitted under the prospecting license. A prospecting license is granted for a period not exceeding three (3) years over a maximum area of 750 contiguous blocks or 157.5 km2 and may be renewed for a maximum of two terms or for further periods of up to three (3) years each. The holder of a prospecting license shall, prior to or at the expiration of the initial term, surrender not less than half the number of blocks of the prospecting area so long as a minimum of one hundred and twenty five blocks or 26.3 km² remain subject to the license and the blocks form not more than three discrete areas each consisting of: a single block, or a number of blocks each having a side in common with at least one other block in that area. (see http://www.eservices.gov.gh/MINCOM/SitePages/MINCOM-TypeOfRights.aspx).

Additionally, because the surface rights on the land do not belong to the state, provisions are made for the compensation of landowners in the event that land must be appropriated for mining purposes. The Mining and Minerals Act of 2006 states in Section 73(1) that "the owner or lawful occupier of any land subject to a mineral right is entitled to and may claim from the holder of the mineral right compensation for the disturbance of the rights of the owner or occupier, in accordance with section." Prior to this, the Minerals and Mining Law of 1986, Section 71(1) of PNDC Law 153 "required adequate payment of compensation to the owner or occupier of land affected by mineral rights for any disturbance of the rights of such owner and for "any damage done to the surface of

the land", buildings, works, improvements or to livestock, crops or trees in the area of such mineral operations" (Ayiteh, Kidido, and Tudzi 2011, 33-34).

Lastly, a component of the fiscal regime addresses the mineral rights and land rights complexity at the point of ownership. There is a ground rent that is paid by mineral rights holders. This is an annual payment charged to mineral rights holders based on whether they possess a prospecting license or a mining lease. The rent is paid to landowners or to the Office of the Administrator of Stool Lands in the event that the land is considered a stool land.

Given the ownership structure, the state has in place processes that prospective mining entities must go through in order to secure rights to begin the process of mining for gold. Also, the state ensures that in the event that mining activities interfere with other surface land use rights, landowners are compensated adequately.

Key Sector Characteristic. The key sector characteristic that enables this policy choice is the nature of the resource in question. Gold is a natural resource, which means that no person has a natural rights claim to the land. Gold deposits are found in specific areas in Ghana, creating the temptation for those who happen to be settlers in that area either by accident or by design to lay claim to the gold deposits. Besides, I go back to an earlier point made at the point of ownership in the timber sector. Edwards and Steins (1998) point to the fact that when natural resources are placed in such a way that it allows access to multiple users, there is the potential for depletion in both quality and quantity since users will attempt to extract as much as they can at the expense of fellow users. Oakerson (1990) describes such resources are facing, among other challenges, the inability to

exclude users from accessing the resource and thus the need for rules to govern the use of such resources. Even if users can design rules that govern use of such natural resources, such rules will have to be enforced, thus the importance of the role of a central public authority such as the state. Again the stools who will be tempted to claim rights to the minerals do so only on the basis of the fact that the minerals are found on or below their land. Just like timber, gold is a natural resource to which it is difficult to make a natural rights claim to.

Enabling Factor. Compounding this is the land ownership system where gold deposits are naturally found. Mends and de Meijere (2006, 6) describe the four main types of land ownership in Ghana as consisting of "customary ownership, state ownership, individual ownership and vested ownership involving shared ownership between the government (legal interest held in trust) and the customary landowners (beneficiary interest). Customary lands form about seventy-eight (78) percent of the total land area in Ghana and consist of both stool and family lands. Family lands together with individual lands form about thirty-five (35) percent of the total lands in customary ownership." This multidimensional nature of land ownership means that there is the potential for different actors to lay claim to mineral deposits at any given time, sometimes even within the same jurisdiction. This carries the potential for local conflict or the lack of uniformity in the rules dealing with access to gold deposits. Moreover, given the economic value of gold and it the potential it holds for national development, it only makes sense that the state will hold the rights to the minerals in trust for the benefit of the entire republic as opposed to the benefit of a few.

Gold at the Point of Production

Mining Gold: Mining gold is no easy undertaking. Once mining companies have made certain that there are enough gold deposits at a given site, there are two main methods for mining. There is the open pit mining approach, which is a method used when the gold deposits are determined to be close enough to the surface of the earth. Heavy machinery is used to dig large holes in the ground in order to get the gold out. Open pit mining also involves the use of explosives in the excavation process. The other method used is underground mining, which is employed when the gold deposits are farther below the surface of the earth. Mining companies dig shafts, drill holes, and use explosives in the excavation process. Once the excavation process is complete, then the extraction process begins. The gold has to be extracted from the ores using cyanide. The cyanide solution allows the gold to be separated from other metals and rocks. Once the gold is extracted, it moves to the refining phase. At this stage the gold is mixed with a combination of a number of chemicals and then heated to turn the gold into gold bars. This process also purifies the gold into the gold standard. Gold mining is an undertaking that requires technical know-how as well as capital to finance all the operations, including the acquisition of heavy machinery, chemicals, and more.

Policy Choice: At the point of production, the state does not set up a state-owned enterprise to undertake gold mining. Instead, gold mining is carried out by private gold-mining companies who are granted mining leases by the state. This is not to say that history of gold mining is devoid of state participation in Ghana because in 1961, the government set up the State Gold Mining Corporation.

In the gold mining sector as it currently stands, there is no specified rule dictating that a state actor is responsible for the mining of gold. That is to say, there is no designation of a state enterprise to engage in gold mining. This has been the case for the last twenty-five years. The point-of-production rules specify mainly the process of acquiring a lease to engage in mining and the fiscal obligation of companies who mine gold. Just as in the case of timber, there is a history of state participation at the point of production in the gold mining sector as the main actor mining gold. In 1961, the State Gold Mining Corporation was established, taking over five gold mines that had been British-owned. Additionally, in 1972 the government enacted a policy where the government owned 55% of shares of all mining operations in which it was a minority shareholder or had no shares at all (Tsikata 1997, 10-11).

State Actions. At the point of production, the state is involved in three ways—granting licenses for mining purposes, regulatory oversight of the sector, and the imposition of fiscal measures (mainly as incentives and partially as revenue extraction). A gold mining company may be granted a mining lease which, as described by the Minerals Commission, gives the holder the right to mine, win or extract specified minerals (or commodities) within the lease area. The lease may be granted to the holder of a prospecting license or any person who establishes to the satisfaction of the Minister that a mineral to which the lease relates exists in commercial quantities within the proposed lease area and can be mined at a profit. The lease is issued for up to thirty years subject to renewal for a further thirty-year term. The size of the area in respect of which a lease may be granted is limited to 300 contiguous blocks or 63 km^2 for a single grant. A person

other than the holder of a reconnaissance or prospecting license may apply for a mining lease in respect of a mineral specified in the application over land that is not the subject of a mineral right for the same mineral applied for.

Alternatively, a restricted license may be granted as well. Restricted mining leases are granted for up to fifteen years and may be renewed for up to the same number of years. At the point of production, the state grants mining support service licenses to interested investors who provide services to support mining companies. Approved services for which a license is granted includes contract mining, drilling and blasting, manufacturing of explosives, mineral assay laboratory, fabrication of mining equipment, supply of mining equipment, and mining consultancy services. Prospective service providers apply to the Chief Executive Officer of the Minerals Commission who grants registration for a one year period although registration can be renewed**.** Lastly a recommendation for Residence/Work Permit is made by the Ghana Minerals Commission to the Ghana Immigration Services in cases where the mining company needs to engage the expertise of an expatriate (Ghana Minerals Commission description at http://www.eservices.gov.gh/MINCOM/SitePages/MINCOM-TypeOfRights.aspx).

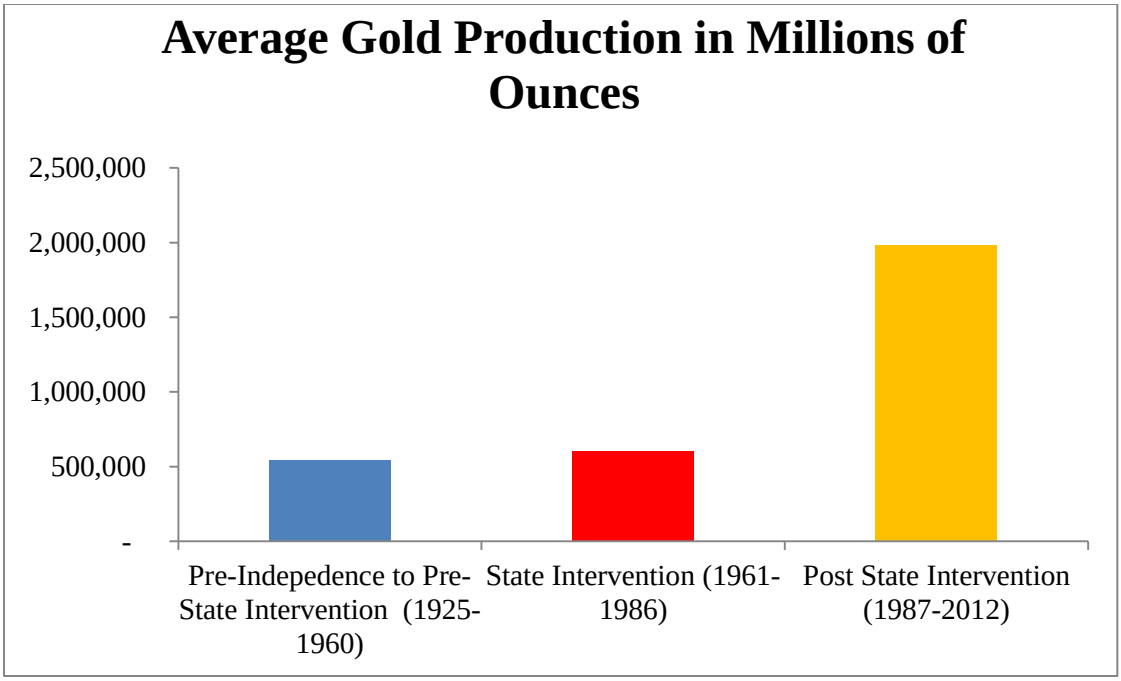
In terms of the fiscal requirements at the point of production, gold-mining companies pay an annual fee for the rights granted under the mining lease. They also pay royalties which range from 3-6% of the value of minerals won. This fee is paid through the Ghana Revenue Authority.

At the point of production, the state also offers a number of fiscal incentives to attract the participation of private actors in the gold mining sector. These incentives

include things such as a capital deduction allowance for tax purposes, ability to carry forward losses for taxation for up to five years, and exemption from import duty on machines imported for mining purposes.

Key Sector Characteristic. The key sector characteristic driving the policy choice is the limited capacity of the state to successfully undertake gold mining activities. In the resource sector characteristic survey, when asked about state capacity to engage in successful gold mining, 58.9% of respondents agreed or strongly agreed that the state has the capacity to engage in the key activities in the gold mining sector at the point of production. Among respondents affiliated with the public sector, 63.8% agreed or strongly agreed that the state has the capacity to successfully undertake gold mining. Among those not affiliated with the public sector, only 38.1% agreed or strongly agreed with the statement. When the results are examined by the years of experience with the gold mining sector, 60.7% of those with five years or less experience agreed or strongly agreed with the statement, 53.3% of those with 6-10 years of experience agreed or strongly agreed, while 57.9% of those with more than 10 years of experience agreed or strongly agreed with the statement. The survey results in general do not cast much doubt on the capacity of the state to successfully engage in mining activities, except in the view of respondents affiliated with the private sector. During interviews conducted during the field research, however, interviewees pointed to the limited capacity of the state to engage in mining activities. In particular, interviewees noted the capital requirements needed to finance mining operations and argued that the state was constrained in meeting those capital requirements. Interviewees also argued that a look at the history of the

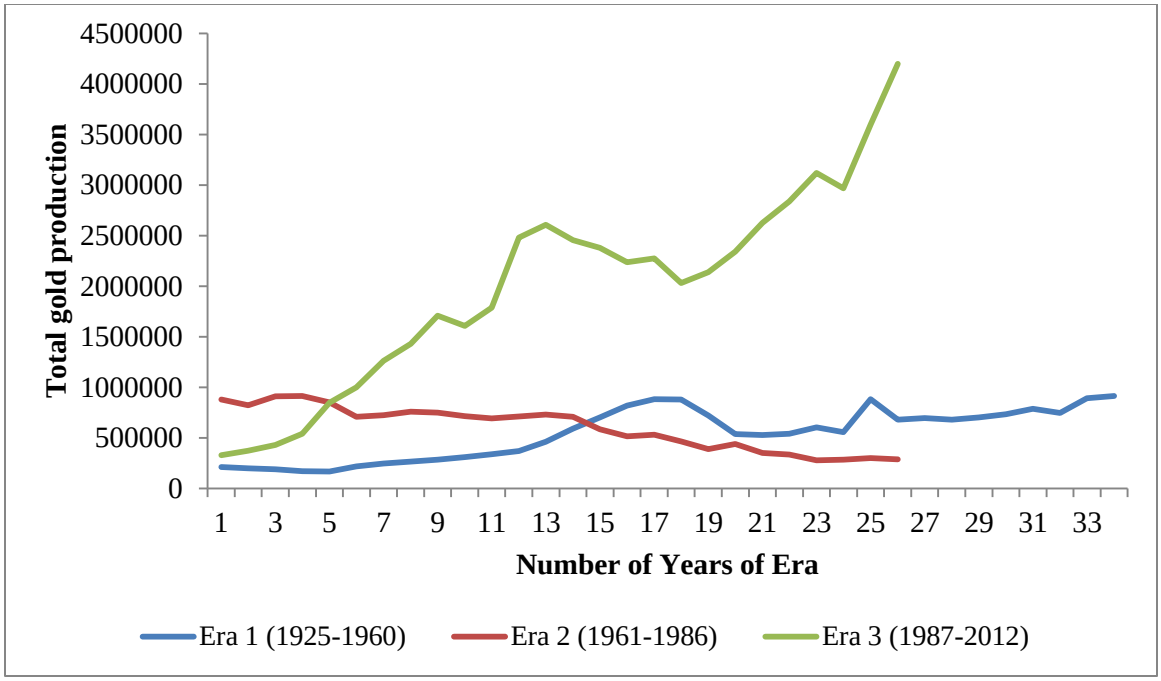
state's involvement in gold mining will validate the point that the state lacks the capacity to successfully engage in gold mining. In the 1980s, the government began a policy of privatizing state-owned enterprises as part of its economic recovery program. The State Gold Mining Corporation was one such state-owned enterprise that was privatized. As Tsikata (1997, 12) observes, the principal reason for privatizing state-owned gold mining enterprises was several years of financial losses at these enterprises. Akabzaa and Darimani's (2001) description of state-owned mining enterprises points further to the inability of the state to engage successfully in gold mining. They argue that the state was driven by revenue, control of resources, and employment generation concerns and not necessarily by efficiency concerns. The consequences of state intervention, they argue, included lack of investment and exploration and under-capitalization of mines. Furthermore, the mines became obsolete because there was no maintenance or attempt to modernize the mines, so the mines eventually became non-competitive. State mining enterprises were operating at serious loses, leading to the closure of some mines (2001, 10-11). The table below shows gold production in three distinct eras: pre-independence up until state intervention, the state intervention years, and the post-state intervention years, when the gold mining sector underwent major privatization.



Source of data: Ofosua 2009, Ghana Minerals Commission, Salifu et al, 2013.

Figure 3: Gold Production, 1925-2012

The average annual gold production in the first era-pre independence to pre-state intervention was 543,999.1 ounces. In the state intervention era, the average gold production was 601,131.1. This is an average increase of about 57,131 ounces, or 9%. The average gold production in the post intervention years has been 1,985,497.7 ounces. This is an increase of about 1,384,366.5 or 69% when the state intervention era is compared to the post-state intervention era. Alternatively, the trajectory of gold production in the three eras shows how gold production trended. In the figure below, I show gold production trends over the three periods under discussion.



Source of Data: Ofosuaa 2009, Salifu et al 2013 Akabzaa and Daramani 2001

Figure 4: Total Gold Production 1925-2012

A close examination of the figure above shows the trend of gold production across three different eras. In the pre-independence to the pre-state-intervention era (Era 1), while gold production does not experience a rapid increase, there is a generally positive trend. The year-to-year changes show an average increase of 21,364 ounces of gold, or 5.7%. Out of the 34 years of data for this era, there were a total of 22 years of increases compared to 12 years of decreases. In the state intervention era (Era 2), gold production shows a generally downward trend. The year-to-year changes show an average decrease of 23,653.4 ounces of gold, or -3.9%. Out of the 26 years of data for this era, there was a total of 10 years of increases in gold production compared to 16 years of decreases in gold production. In the post-state-intervention era (Era 3), gold

production shows a generally positive trend. The year-to-year changes show an average increase of 154,843 ounces of gold, or 11.7%. Out of the 26 years of data for this era, there were a total of 20 years of increases and only 6 years of decreases.

The goal at the point of production is to maximize production in order to accrue all the benefits that come from having such a resource endowment. It stands to reason that the most ideal arrangement and strategic choice needed to maximize the benefit is private production. And as the historical evidence shows, the state has demonstrated through the difficulties encountered by the State Gold Mining Corporation that it lacks the operational capacity to engage in gold mining. It is, therefore, clear why state capacity issues with successfully setting up and operating state enterprises for gold production would lead the state to outsource gold production to non-state actors.

Enabling Factors. To further enable the contracting of gold production to private actors, the contribution gold mining makes to the economy is another important factor. Given the importance of gold mining to the economy, the choice at the point of production determines whether those benefits to the economy will be enjoyed or not. In this section, I show the importance of gold mining to the economy, which, when examined against the backdrop of the state's capacity discussed above, shows why outsourcing to private entities makes sense at the point of production in gold.

Table 38: Foreign Direct Investment (FDI) in Gold Mining, 1991-2009

YEAR	TOTAL FDI (US $ millions)	TOTAL FDI TO MINING (US $ millions)	TOTAL FDI TO GOLD MINING (US $ millions)
1991	-	279	265
1992	-	595	565
1993	-	263	250
1994	-	98	93
1995	347	165	156
1996	1,029	774	736
1997	1,224	593	563
1998	436	267	254
1999	448	214	204
2000	363	231	220
2001	364	275	261
2002	372	313	298
2003	467	330	313
2004	695	556	528
2005	707	662	628
2006	1,435	799	759
2007	1,640	670	636
2008	4,977	765	727
2009	2,083	762	724

Source: Bloch and Owusu (2011). FDI to Gold mining is calculated based on authors' assertion that on the average 95% of mining FDI goes to gold mining.

The next table looks at mineral royalties.

Table 39: Mineral Royalties, 1993-2011

Year	Total Mineral Royalties	Total Contribution from Gold Mining
1993	$ 11,545	$ 10,960
1994	$ 13,372	$ 12,702
1995	$ 17,437	$ 16,570
1996	$ 21,724	$ 20,636
1997	$ 16,889	$ 16,050
1998	$ 21,560	$ 20,483
1999	$ 18,234	$ 17,322
2000	$ 21,790	$ 20,700
2001	$ 17,780	$ 16,890
2002	$ 19,364	$ 18,396
2003	$ 23,174	$ 22,015
2004	$ 23,984	$ 22,786
2005	$ 26,035	$ 24,733
2006	$ 34,508	$ 32,782
2007	$ 43,712	$ 41,526
2008	$ 55,777	$ 52,989
2009	$ 64,179	$ 60,970
2010	$ 101,114	$ 96,058
2011	$ 146,855	$ 139,513

Source: Ghana Chamber of Mines. Figures from Chamber are converted into US dollars based on exchange rate data obtained from the World Bank's World Development Indicators. Gold share is calculated based on a 95% share as per conversation with Ghana Chamber of Mines.

The next table looks at corporate taxes paid by gold-mining companies.

Table 40: Contribution of Gold Mining to Corporate Taxes

Year	Total Corporate Taxes to Mining	Total Contribution from Gold Mining
1990	$ 9,419,803	$ 8,948,813
1991	$ 2,054,612	$ 1,951,881
1992	$ 1,137,629	$ 1,080,748
1993	$ 6,772,571	$ 6,433,942
1994	$ 7,548,618	$ 7,171,187
1995	$ 17,006,350	$ 16,156,032
1996	$ 5,601,153	$ 5,321,095
1997	$ 4,818,835	$ 4,577,893
1998	$ 6,251,256	$ 5,938,693
1999	$ 11,669,952	$ 11,086,454
2000	$ 2,897,524	$ 2,752,648
2001	$ 3,464,011	$ 3,290,810
2002	$ 2,965,756	$ 2,817,468
2003	$ 7,861,156	$ 7,468,098
2004	$ 11,154,162	$ 10,596,453
2005	$ 29,779,973	$ 28,290,975
2006	$ 44,122,537	$ 41,916,410
2007	$ 50,698,528	$ 48,163,602
2008	$ 69,531,708	$ 66,055,122
2009	$ 88,444,690	$ 84,022,455
2010	$ 168,815,206	$ 160,374,445
2011	$ 429,872,365	$ 408,378,747

Source: Ghana Chamber of Mines. Figures from Chamber is converted into US dollars based on exchange rate data obtained from the World Bank's World Development Indicators. Gold share is calculated based on a 95% share as per conversation with Ghana Chamber of Mines.

The next table highlights another form of tax: pay-as-you-earn taxes contributed by gold-mining companies.

Table 41: Contribution of Gold Mining to Pay-As-You-Earn (PAYE) Taxes

Year	Total Corporate Taxes to Mining	Total Contribution from Gold Mining
1993	$ 4,083,948	$ 3,879,751
1994	$ 5,033,892	$ 4,782,197
1995	$ 6,631,228	$ 6,299,667
1996	$ 10,293,387	$ 9,778,717
1997	$ 12,218,006	$ 11,607,106
1998	$ 13,417,422	$ 12,746,551
1999	$ 10,440,650	$ 9,918,617
2000	$ 10,872,034	$ 10,328,432
2001	$ 10,625,594	$ 10,094,314
2002	$ 12,803,568	$ 12,163,390
2003	$ 16,273,102	$ 15,459,447
2004	$ 14,937,018	$ 14,190,167
2005	$ 21,412,715	$ 20,342,079
2006	$ 23,626,532	$ 22,445,205
2007	$ 36,982,279	$ 35,133,165
2008	$ 44,561,015	$ 42,332,965
2009	$ 73,155,866	$ 69,498,073
2010	$ 92,569,808	$ 87,941,317
2011	$ 107,035,821	$ 101,684,030

Source: Ghana Chamber of Mines. Figures from Chamber are converted into US dollars based on exchange rate data obtained from the World Bank's World Development Indicators. Gold share is calculated based on a 95% share as per conversation with Ghana Chamber of Mines.

The next table looks at the contribution of gold-mining companies to key socio-economic areas in mining towns.

Table 42: Socio-Economic Contributions of Gold Mining

Socio-Economic Contributions	Overall Avg. (2004-2011)
Education	$ 1,310,211
Health	$ 559,046
Electricity	$ 488,013
Roads	$ 1,073,987
Water	$ 488,347
Housing	$ 421,565
Agro-Industry	$ 357,432
Agriculture	$ 653,890
Sanitation	$ 515,752
Resettlement Action Plan	$ 4,953,035
Alternative Livelihood Projects	$ 1,070,532
Others	$ 2,404,629
Total	$ 14,007,230

Source: Ghana Chamber of Mines.

The six tables displayed detail the important contributions gold mining makes to the economy. The contributions can be summarized as follows:

- On average, foreign direct investment averaged totaled $431 million per year over the years for which data is available. The year-to-year changes in the level of foreign direct investment averages about $25.5million, or a year-to-year average of about 27%.

- On average, gold mining activities contributed $1,391,926.95 to all mineral royalties collected over the period for which data is obtained. The year-to-year changes in mineral royalties averages about $7,141.80 or a year-to-year average of about 17.1%.

- On average, gold mining activities contributed $42,399,726.59 to all corporate taxes paid by the mining sector. The year-to year changes in corporate taxes averages about $19,020,473.03 or a year-to-year average of about 65%.

- On the average gold mining activities contributes $26,348,694.72 to all pay-as-you-earn (PAYE) taxes paid by the mining sector. The year-to-year changes in pay-as-you-earn taxes averages about $5,433,571.08 or a year-to-year average of about 21.9%.

- In addition to all the revenue accruing from various fiscal impositions on the sector as shown in the above bullet points, there are also the various investments in areas such as education, and roads, electricity among others. The contribution to employment as a result of all these fiscal regime impositions on the gold mining sector, as well as the direct investments made to the sector, is worth mentioning. In 1995, the total employment in the gold mining sector was 19,557 people. In 2000 the number was 15,120; in 2005 the number was 13,766; in 2008 it was 17, 829; and in 2009 it was 17,332.

The contribution of the gold mining sector is also evident in the survey results. 80% of the survey respondents agreed or strongly agreed that the gold mining sector is a major contributor to the economy. Among respondents affiliated with the public sector, 84.5% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 71.4% agreed or strongly agreed with the statement. When the results are examined by the years of experience with the gold mining sector, 83.9% of those with

five years or less experience agreed or strongly agreed with the statement. 53.3% of those with 6-10 years of experience agreed or strongly agreed, while 89.5% of those with more than 10 years of experience agreed or strongly agreed with the statement. Field interviews also confirmed the important contribution gold mining makes to the economy. One interviewee declared the importance of gold mining to the economy as the reason the state should ease the regulatory burden on gold-mining companies, since that had the potential to cripple gold-mining companies and furthermore undermine the contributions the sector makes to the economy.

As argued in Chapter 4, dealing with the timber sector, the presence or absence of alternative actors enables, in part, whether or not the state sets up a state-owned enterprise to engage in point-of-production activities. If there are alternative actors with the capacity to undertake production successfully, the state has an incentive to at least consider that as possible alternative to a state-owned enterprise. Private sector involvement in mining has been present in Ghana since the beginning of the mining industry. The state got involved through nationalization policies in the 1960s. However, once those policies were abandoned and mining companies privatized, there were again private actors ready with the expertise, financial capital and capacity to re-engage in gold mining activities in Ghana. The presence of alternative actors upon whom the state can rely upon for the mining of gold is not to be understood as the state possessing the capacity but choosing to use alternative actors instead. The key takeaway is that, the state's move to set up a gold mining corporation and nationalize a number of major mines, the subsequent failure and sale to private companies point to the inability of the

state to successfully undertake gold mining. It is because of the state's demonstrated failure in the years it seized control compared to the generally successful mining of gold by private companies that leads me to point to alternative actors as enabling the state's choice. The state, due to its limited capacity, can afford to contract out because there are alternative actors with the capacity to successfully mine gold at the point of production.

Gold Mining at the Point of Sale

Policy Choice. At the point of sale in the gold mining sector, the state uses non-price-fixing mechanisms to extract rents from the sector. The non-price-fixing mechanism involves the imposition of a comprehensive fiscal regime on the sector through which various fees and taxes are collected at key points. The table below identifies and summaries the elements of the fiscal regime.

Table 43: Fiscal Regime for Rent Extraction from Gold Mining Sector

Fiscal Element	Description	Amount
Exemption Fees	Paid to the MC to receive exemption for duty free imports	Varies
Licensing Fees		
Reconnaissance	For reconnaissance exploration rights	$10,000
Prospecting License	For prospecting/detail exploration rights	$15,000
Mining Lease	For mining rights	$30,000
Royalties	Production base tax by mining lease holders to the government	3% - 6% of value of minerals won. As of 2010, currently set at 5%.
Corporate Income Tax	Tax on net profit of company	25% of net profits
Withholding Tax	Tax on dividends to shareholders and on management fees paid to contractors	10% on paid dividends and fees
Capital Gain Tax	Tax on profits on shale of mine assets or mine	10% of capital gains
Dividends	Government share of dividends	10% of declared dividends
Ground Rent	Annual payment by mineral right holders to land owners or to the Office of the Administrator of Stool Lands, in the case of stool land	10,000 cedis/ha or prospecting license holders and 30,000 cedis/ha for mining leas holders
Property Tax	Rates levied on immovable property of mining companies including machinery and equipment to host District Assemblies	Variable
Stamp Duties	Granting of prospecting license Granting mining lease Transfer of license or lease Principal security Collateral security Transfer of security	5,000 cedis 50,000 cedis 1% of value of consideration 0.5% of amount if secured 0.25% of amount secured 0.25% of amount secured

Source of Information and Description: Akabzaa and Ayamdoo, 2009.

The fiscal regime presented above has historically been largely static, with variations in rates or in just one or two other elements. In the past, a rent ranging from 5-35% was extracted in the form of import duties from mining companies and was abolished in 1986. Another type of rent extracted was the foreign exchange tax, whereby the government taxed mining companies at a rate of 33-75% of all foreign exchange earned. There was also the gold export levy, in which gold-mining companies were charged $3.00 for every ounce of gold after the first 100,000 exported. Corporate taxes have been as high as 55% in the past. The upper limit on royalties was pegged at 12% in the past. 25% in additional profit tax was extracted as rent in the past from mining companies. Government equity participation has ranged from 55-100% in the past, which means all dividends paid were paid to the government at that rate (Akabzaa and Ayamdoo 2009).

Key Sector Characteristic. Why does the state use a non-price-fixing mechanism to extract rents from the gold mining sector? What are the particular sector characteristics that help explain why the use of a fiscal regime consisting of taxes and fees is the preferred choice of the state? I argue that the key here is this—the dependence on foreign exchange imperative is largely absent in the gold mining sector. To illustrate this important point, we must revisit the foreign exchange imperative argument from the cocoa sector. Interviewees repeatedly made the point that that the cocoa sector not only served as an important source of foreign exchange, but that source of foreign exchange was guaranteed. It is guaranteed because of the way the state organizes the point of sale, in that it purchases the cocoa from farmers using local currency and, by law, the Ghana

Cocoa Board (a state organization) is the only authorized exporter of cocoa in Ghana. The gold mining sector is different. There is no sole exporter of gold. The large-scale gold-mining companies do engage in exporting, provided they have a gold export license. More importantly, the law allows the central bank, Bank of Ghana, to permit gold-mining companies to retain at least 25% of the foreign exchange earned from gold exports in external accounts for the purpose of meeting obligations such as acquisition of spare parts, machinery, remittances for expatriate personnel, debt servicing, etc. (Minerals and Mining Act, (3) (1 and 2). The specific percentage to be retained is negotiated between the gold mining company and the central bank and approved by parliament. Akabzaa and Ayamdoo (2009, 33) assert that the percentage retained ranges from 25%-80%. In a recent news story, as per the Auditor General's report, one gold mining company retained 100% of its earnings in an external account (http://www.ghanaweb.com/GhanaHomePage /NewsArchive/artikel.php?ID=283021). The mining company refuted the story, arguing that it spends 80% of its earnings locally (http://www.ghanaweb.com/GhanaHomePage/ NewsArchive/artikel.php?ID=283852). There is some tension over the issue of the retention when it comes to the foreign exchange earnings of gold-mining companies. During field research I interviewed a former state minister who asserted that the state could not count on gold mining as a guaranteed source of foreign exchange precisely because of what gold-mining companies are able to negotiate when it comes to foreign exchange earnings. In the table below, I show the foreign exchange earnings from gold mining. I use the Akabzaa and Ayamdoo (2009, 33) low end of 25% and high end of 80% of foreign exchange retained by gold-mining companies. I then calculate the percentage

retained by gold-mining companies by first assuming a 25% retention rate and then an 80% retention rate. Lastly, I calculate the state share of the total foreign exchange earned based on the two scenarios of the percentage of foreign exchange retained. For the years of data available, an average of $1,030.5 billion has been earned in gold exports each year. If 25% is retained by the mining companies, the state's share averages $778.2 million and if 80% is retained by the gold-mining companies, the state's share averages $206 million. This is the uncertainty that the former minister was alluding to.

Table 44: Foreign Exchange Earnings from Gold Exports

Year	Total Export Earnings $ US Millions	State Share if 25% retained $ US Millions	State Share if 80% is retained $ US Millions
1986	106.4	26.6	85.1
1987	142.5	35.6	114.0
1988	168.5	42.1	134.8
1989	159.9	40.0	127.9
1990	201.7	50.4	161.4
1991	301.2	75.3	241.0
1992	343.4	85.9	274.7
1993	433.9	108.5	347.1
1994	548.6	137.2	438.9
1995	647.3	161.8	517.8
1996	612.4	153.1	489.9
1997	579.2	144.8	463.4
1998	678.8	169.7	543.0
1999	710.8	177.7	568.7
2000	702.0	175.5	561.6
2001	617.8	154.5	494.2
2002	689.1	172.3	551.3
2003	830.1	207.5	664.1
2004	840.2	210.1	672.2
2005	945.8	236.5	756.6
2006	1,277.3	319.3	1,021.8
2007	1,733.8	433.5	1,387.0
2008	2,246.3	561.6	1,797.0
2009	2,551.4	637.9	2,041.1
2010	3,803.5	950.9	3,042.8
2011	4,920.2	1,230.1	3,936.2

Source of Data: ISSER, The State of The Ghanaian Economy, 1992,1997, 2002, 2007, 2012. State share is calculated using the minimum percentage of 25% (based on the minerals and mining Act 2006) and the maximum percentage of 80% based on the work of Akabzaa and Ayamdoo (2009, 33)

A point worth nothing is that the foreign exchange imperative alluded to here began in 1986 with the passage of Provisional National Defence Council Law153 (PNDCL153) where mining companies were permitted to retain a percentage of foreign

exchange earnings in external accounts, a practice that was continued with the Minerals and Mining Act in 2006. During the period in which nationalization was a major policy tool regarding gold mining, the state only went as far as making the central bank the sole exporter of gold, in addition to manipulating the exchange rates to the benefit of the state. There was no retention percentage allowed to gold-mining companies, nor did the state make any attempts at price fixing. When survey respondents are asked about the state's dependence on the gold mining sector, 64% of respondents agreed or strongly agreed that the state depends on the gold mining sector for foreign exchange. Among respondents affiliated with the public sector, 69% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 59.1% agreed or strongly agreed with the statement. When the results are examined by the years of experience with the gold mining sector, 61.8% of those with five years or less of experience agreed or strongly agreed with the statement. 60.0% of those with 6-10 years of experience agreed or strongly agreed, while 73.7% of those with more than 10 years of experience agreed or strongly agreed with the statement. The question of the state's dependence on the gold mining sector is expressed in the opinions of well-informed persons in this survey. I do not dispute that contention, for the state does depend on these traditional exports to help shore up its foreign exchange reserves. The key issue here is the extent to which that revenue is guaranteed. Given the interview with the highly placed former minister as well as the legislation regarding retention of earnings in an external account, there is always uncertainty when it comes to foreign exchange earnings from the gold mining sector.

Therefore, it is understandable that the state primarily uses a fiscal regime to extract rents from the gold mining sector as opposed to a price-fixing mechanism.

Enabling Factors. State policy choice at the point of production is an important enabling factor as to what happens at the point of sale in the gold mining sector. In the gold mining sector, key interviewees see the use of price-fixing mechanisms as an instrument of control over the resource sector. Using this as the premise, the argument is made that the extent of control is driven by the extent of the investment the state makes—the greater the state's investment, the more control the state can exercise. The heavy reliance on private actors at the point of production and the lack of state investment in the sector were pointed out as the key factors that place the state on a path where it has little control over the gold-mining companies at the point of sale. The private actors who are relied upon are usually international private actors. The table below shows the role of foreign direct investment in the gold mining sector.

Table 45: Foreign Direct Investment (FDI) in Gold Mining, 1991-2009

YEAR	TOTAL FDI (US $ millions)	TOTAL FDI TO MINING (US $ millions)	TOTAL FDI TO GOLD MINING (US $ millions)
1991	-	279.5	265.5
1992	-	595.4	565.6
1993	-	263.9	250.7
1994	-	98.3	93.4
1995	347.3	165.0	156.8
1996	1,029.0	774.8	736.1
1997	1,224.6	593.0	563.4
1998	436.8	267.5	254.1
1999	448.6	214.8	204.1
2000	363.9	231.8	220.2
2001	364.8	275.5	261.7
2002	372.6	313.7	298.0
2003	467.1	330.4	313.9
2004	695.7	556.4	528.6
2005	707.0	662.0	628.9
2006	1,435.5	799.5	759.5
2007	1,640.1	670.2	636.7
2008	4,977.4	765.3	727.0
2009	2,083.4	762.3	724.2

Source: Bloch and Owusu (2011). FDI to Gold mining is calculated based on authors' assertion that on the average 95% of mining FDI goes to gold mining.

The table above is an indication of the heavy involvement of international private capital in gold mining in Ghana. This is the investment that ensures successful gold mining. The state bears little to none of this investment risk in terms of the injection of capital. The state carries a 10% interest in mining operations for which it makes no financial contribution. It is a free carried interest. The private actors argue that they shoulder all the risk, and as a result there is very little room for the state to be controlling at the point of sale like it would be, for example, in the cocoa sector. When survey respondents were asked about the state's investment in the sector, only 46.1% of respondents agreed or

strongly agreed that the state makes investments in the sector with another 42% who disagreed or strongly disagreed. Among respondents not affiliated with the public sector only 33.3% agreed or strongly agreed with the statement. All the risks, particularly the financial risks, are borne by these private actors. Combined with the choice of using private actors at the point of production, whose heavy capital investments are needed to ensure the viability of the sector, the state is left in a position where rent extraction cannot necessarily use controlling mechanism deemed too extreme.

The nature of gold and its pricing also enable the use of a non-price fixing mechanism to extract rents. Gajigo, Mutambatsere and Ndiaye (2012) point to several factors that determine the price of gold including supply and demand, shifts in supply arising mainly from discovery of new gold deposits, and the need for safe investment. Additionally, Gajigo, Mutambatsere, and Ndiaye (2012) discuss the three key end uses of gold which break down roughly as follows: 12% for industrial purposes, 53% for jewelry and 35% for investment purposes. What this shows is that not all end uses of gold are for immediate consumption in the way that cocoa beans or even timber products go for immediate consumption, which means that the demand may also fluctuate depending on the factors alluded to above. In two interviews with stakeholders in the Ghanaian gold mining sector, they alluded to the fact that the nature of gold, the uses to which it is put, and all the external factors that drive that price make it difficult for the state to attempt extraction through the use of producer price fixing. Besides, the historical antecedent of the gold mining sector has been one where the use of pricing mechanisms to extract rent from gold-mining companies has been largely absent. There has been no attempt by the state to

engage in a state-producer price relationship in which the state acts as the sole buyer of gold from gold-mining companies at a price determined by the state.

Another point alluded to in the course of interviews was that the gold ore extracted by large scale mining operations undergoes minimal processing in Ghana. Further processing outside the country is required before the gold is actually sold, which means that the true value of gold and the price at which it is sold cannot be known with certainty as long as further and final processing is required. Therefore, the state is limited in its ability to influence the price by trying to use a producer price-fixing mechanism. In addition, the share of Ghana's global output for the purposes of gold trading is small, thereby limiting its influence on price. All of these peculiar factors of the gold sector and its price determination dynamics require the state to find other means of rent extraction from the sector, the result of which is the fiscal regime of taxes and fees we see in Ghana.

Another enabling factor is that the method of rent extraction is specified in the mining concession. The most common method used is the mineral royalty. The mining concession specifies how the royalty will be assessed, usually doing so on the basis of the market price during the period of extraction and processing. This means that if the concession specifies that a particular price will serve as the basis for that determination, then the parties to the agreement—state and mining companies—have to abide by those terms. Thus market price becomes the reference point for making that determination.

Other Points to Note

The resource sector characteristic survey revealed a few insights of the well-informed persons associated with the gold mining sector. Those insights did not emerge

in interviews and did not have much support from secondary data. However, they provide important insights into the gold mining sector so they are noted here as well. On the question of long term reliance on the sector **,**42.2% of respondents agreed or strongly agreed that the state will be able to rely on gold for the long term development needs of Ghana. Among respondents affiliated with the public sector, 44.8% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 28.6% agreed or strongly agreed with the statement. When the results are examined by the years of experience with the gold mining sector, 39.3% of those with five years or less experience agreed or strongly agreed with the statement. 33.3% of those with 6-10 years of experience agreed or strongly agreed, while 57.9% of those with more than 10 years of experience agreed or strongly agreed with the statement.

Regarding the donor community**,** 61.1% of respondents agreed or strongly agreed that the international donor community (World Bank, IMF, etc.) has a great influence on the policies adopted in the gold mining sector. Among respondents affiliated with the public sector, 58.6% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 66.7% agreed or strongly agreed with the statement. When the results are examined by the years of experience with the gold sector, 57.1% of those with five years or less experience agreed or strongly agreed with the statement. 86.7% of those with 6-10 years of experience agreed or strongly agreed, while 52.6% of those with more than 10 years of experience agreed or strongly agreed with the statement. The percentages observed here capture the episodic nature of the involvement of international donors such as the donor-supported structural adjustment programs or

economic recovery program. Generally, however, rarely during interviews was donor support raised as influencing state policy choices on a day-to-day basis.

On the influence of domestic stakeholders, 66.7% of survey respondents agreed or strongly agreed that the gold mining sector has stakeholders who are able to successfully influence government policy. Among respondents affiliated with the public sector, 67.0% agreed or strongly agreed with this statement. Among those not affiliated with the public sector, 57.1% agreed or strongly agreed with the statement. When the results are examined by the years of experience, 66.1% of those with five years or less experience agreed or strongly agreed with the statement. 66.7% of those with 6-10 years of experience agreed or strongly agreed, while 68.4% of those with more than 10 years of experience agreed or strongly agreed with the statement. The key representative group for mining companies is the Ghana Chamber of Mines, whose activities were not part of the focus of this study. However, in conversations I got the sense that the influence has to do more with the extraction of incentives from the state as opposed to key policy choices of along the dimensions examined for this study.

Gold Mining Sector Choices and the Material Well-Being of Workers in the Sector

As discussed in the chapters on cocoa and timber, the secondary line of inquiry in this dissertation looks at the consequences of state policy choices on the material well-being of those whose everyday livelihoods depend on work in the sector. My interest is in workers who are involved in the basic point-of-production activities, the mining of the gold. How do the state's policies affect the material well-being of these workers? I looked at it from the point of sale and the rent-extraction mechanism. I argue that gold

mining workers do not encounter the state directly at the point of sale, since rents are extracted from the gold mining company for whom the worker is employed. What happens in the case of the gold mining worker, then, is that the company can pass on the extent of the rents extracted in the form of lower wages. The other dimension of the material well-being of interest to me is the extent to which gold mining workers have access to basic facilities to address key needs—education, economic, and political needs. The data in this section is based on a survey of gold mine workers in two towns in the Western Region. The information is therefore limited to the experience of those workers in the two towns—Tarkwa and Damang—and is being used here for illustrative purposes to gain a sense of the consequences of state policy choices. I will first describe the demographics of the workers and then proceed to describe various aspects of their well-being asked about in the survey. The table below highlights the key demographic characteristics of the respondents to the survey.

Table 46: Demographic Profile of Gold Mine Workers in Tarkwa And Damang, Western Region

Demographic Characteristics	Percentage
Length of time in gold mining	
Less than a year	10.1
1-5 years	36.7
6-10	31.2
11-15	10.1
16-20	7.3
More than 20 years	4.6
Gender	
Male	77.1
Female	22.9
Education	
Post secondary	26.6
Some middle school/junior high school	23.9
Secondary school completed	18.3
Some secondary school	14.7
Some university	8.3
Primary school completed	6.4
Marital Status	
Married	73.4
Single	25.7
Head of Household	
Yes	79.8
No	20.2
Religion	
Christian groups/denominations	91.7
Muslim groups/denominations	7.3
No. of Children	
1-5	64.2
0	22.0
Average Age	38.1
Median Age	37.0

Three key areas I want to point in the above table. The first is the predominance of men working in gold mines in the two towns surveyed. The second is the level of educational attainment among the workers surveyed. In sharp contrast to cocoa farmers

or even timber workers, about a quarter of those working in the mines have a post-secondary education, which suggests that mining operations even at the level of the workers surveyed required more than just very basic skills. Overall the educational attainment of gold mine workers is higher than timber workers and much higher than cocoa farmers. The last key area is the length of time working in the sector, which shows that most of the workers surveyed have worked in the sector for several years.

I will now proceed to examine a number of aspects of their material well-being. The table below reflects the self-reported monthly household income of surveyed workers in the gold mining sector.

Table 47: Monthly Household Income of Gold Mine Workers in Tarkwa and Damang, Western Region

Amount (GH₵)	US Dollar Equivalent	% Gold Mine Workers
Less than 100	55.90	0.9
101-200	56.40-111.70	11.0
201-300	112.30-167.60	9.2
301-400	168.20-223.50	9.2
401-500	224.00-279.30	2.0
Above 500	279.30	69.8

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About three-quarters of gold mine workers indicated they earned more than 500 Ghana cedis (equivalent to more than $279.30). 11% earn between the equivalent of $56-$111.70 a month, 9.2% earn the equivalent of $168.20 - $223.50 and another 9.2% earn the equivalent of $112.30 - $167.60. 2% of the workers earn the equivalent of $224 - $279.30. I used two indicators of the World Bank and the target goals in the Millennium

Development Goals to make some judgments about the extent of poverty among these cocoa farmers. Extreme poverty is examined by looking at the percentage of people who live at or below an income level of $1.25 a day. The other poverty indicator looks at the percentage of the population who live at or below a level of $2.00 a day. From the table above I calculated the high end and low end of the ranges by dividing the dollar equivalent of the household income by 30 days. In the table below I show the percentage of gold mine workers living within a certain dollar-per-day range.

Table 48: Household Income Per Day of Gold Mine Workers in Tarkwa and Damang, Western Region

	Dollars per day	
Percentage of Gold Mine Workers	**Lower end**	**Upper End**
0.9	1.9	n/a
11.0	1.9	3.7
9.2	3.7	5.6
9.2	5.6	7.4
2.0	7.5	9.3
69.8	9.3	n/a

Using the standard of living at or below $1.25 a day for extreme poverty and at or below $2.00 for per day as the threshold for poverty, I examine this scenario as a way of demonstrating the impact that state policy has on the material well-being of gold mine workers and their households. Take for instance the 0.9% of gold mine workers in the above table whose dollar per day household income is $1.90. If one of these workers heads a household of three (the worker, spouse, and one child), it means that each of these individuals have at their disposal $0.63 per day, putting all 0.9% in extreme

poverty. If we apply the same logic of three household members to the 11.0% with household income falling between $1.90 and $3.70, each household member receives anywhere between $ 0.63 and $1.23, putting them in a situation of extreme poverty. If we apply the same logic of three members per the household to the 9.2% with per day household income falling between $3.70 and $5.60, each household member receives between $1.20 and $ 1.90 per day, putting them in a situation of poverty. This means that 11.9% of gold mine workers and their households potentially live in extreme poverty with another 9.2% living in poverty. In 2012, when this survey was conducted, the daily minimum wage in Ghana was $2.65. Using the daily minimum wage in Ghana as a reference point, it exacerbates the poverty situation of gold mine workers and their households. From Table 48, and using again a household of three, this means that about 30.3% of gold mine workers and their households live below the daily minimum wage. Living wages are beyond the scope of this study, but given the economic challenges in Ghana, most of the gold mine workers represented in the table above will face economic challenges on a day-to-day basis.

Table 49: Basic Living Conditions of Gold Mine Workers in Tarkwa and Damang, Western Region

	Source	%
Source of drinking water	Tap water	48.6%
Source of bathing water	Private connection to a pipe line	45.0
Toilet type	Flush toilet	44.0
Toilet status	Private	70.6
Source of energy	Electricity	99.1
Source of cooking fuel	Gas	71.6
Use and own mobile phone	Yes	100.0
Own a radio	Yes	88.1
Own a television	Yes	94.5
Own bicycle	Yes	3.7
Own motorcycle	Yes	1.8
Own car	Yes	18.3

The table shows the basic living conditions of gold mine workers. The basic living conditions of gold mine workers outpace those of the timber sector workers and especially cocoa farmers. The extent of access to electricity, the use of gas as a source of cooking fuel, and private toilet status are good indicators of a decent standard of living. In addition to 48.6% who drink tap water, there is another 41.3% who drink sachet/pure water. Almost all workers have access to electricity. 71.6 % of these sector workers indicated using gas as their source of cooking fuel. All of them own and use a mobile phone, which allows for ease of communication. Another intriguing number from the table is the 18.3% of sector workers who own a car, a very different number than was found in the timber and cocoa sectors.

Addressing Education Needs. The table below represents the presence of educational facilities in the gold mining towns. The table shows that from the pre-school level to the

technical/vocational level, there are accessible facilities gold mine workers can use to address their education needs. The use pattern shows low percentages in areas such as senior high school and above. Those percentages must be interpreted within the context of whether the workers have need of those facilities. What the survey did not do is find out whether workers have children who would like to access those facilities but are unable to, for whatever reason. Nonetheless, at the barest minimum there are facilities present that can be used to address basic, secondary and some post-secondary education needs.

Table 50: Facilities Used by Gold Mine Workers to Address Educational in Tarkwa and Damang, Western Region

Facility	Exists?	Accessibility	Use Pattern
Nursery school	Yes	Walk	58.7%
Primary school	Yes	Walk	54.1
Junior High School	Yes	Walk	33.9
Senior High School	Yes	Public bus	25.7
Technical/Vocational	Yes	Public bus	1.8
Polytechnic	No	Public bus	2.7

Addressing Health Needs. The table below shows a list of facilities gold mine workers can use to address their health needs. There are facilities in the towns that allow gold mine workers to address their health needs. All facilities are accessible. The use patterns shows that gold mining workers tend to draw on state facilities to address their health needs more than they do on private facilities. It must be noted that about half of the

workers survey do also draw on private hospitals, which is more than in the other two sectors examined.

Table 51: Facilities Used by Gold Mine Workers to Address Health Needs in Tarkwa and Damang, Western Region

Facility	Exists?	Accessibility	Use Pattern
Clinic(government)	Yes	Public transport	71.6%
Clinic (private)	Yes	Public transport	28.4%
Hospital (government)	Yes	Public transport	85.3%
Hospital (private)	Yes	Public transport	49.5%
Traditional healer	Yes	Public transport	6.4%
Polyclinic	Yes	n\a	n\a

Addressing Economic Needs. In the table below I look at how gold mine workers surveyed address their economic needs for food, transportation, and other necessities. Trade stores are petty trading stores which gold mine workers can get basic food items. From the table below, there is a high use pattern among these workers for the petty stores as well as for fresh produce markets. To address their financial needs, gold mine workers tend to use private banks more than they use rural banks, which is different from the timber sector where they tend to use the rural banks than private banks. The lack of a railway stop is not an anomaly since the rail infrastructure in the country is virtually nonexistent. However, public transport stops are accessible for travelling purposes.

Table 52: Facilities Used by Gold Mine Workers to Address Economic Needs in Tarkwa and Damang, Western Region

Facility	Exists?	Accessibility	Use Pattern
Trade stores	Yes	Walk	100%
Fresh produce markets	Yes	Walk	100%
Rural bank	Yes	Walk	48.6%
Private bank	Yes	Public transport	92.7%
Money lender	Yes	Public transport	28.4%
Public transport stop	Yes	Walk	98.0%
Train station	No	n\a	n\a
Market Stalls (selling groceries and/or clothing)	Yes	Walk	96.3%

Addressing Security Needs. The table below looks at how gold mine workers address their security needs in case of fire or criminal activity. As the table shows, the police station is the facility used to address security needs of 64.2% of respondents. A fire station is only used in the event of a fire, so the low use pattern is expected. The presence of neighborhood watch, with a use pattern of about a third of all survey respondents, is unique among the three sectors examined.

Table 52: Facilities Used by Gold Mine Workers to Address Security Needs in Tarkwa and Damang, Western Region

Facility	Exists?	Accessibility	Use Pattern
Police station	Yes	Public transport	64.2
Fire station	Yes	Public transport	17.4
Neighborhood watch	Yes	n\a	33.9

Addressing Governance Needs. Gold mine workers, just like other citizens, have governance needs and require avenues to bring those needs to the attention of state

officials. In the table below I highlight a few key government institutions on which they can draw to address various governance needs.

Table 53: Facilities Used by Gold Mine Workers to Address Governance Needs in Tarkwa and Damang, Western Region

Facility	Exists?	Accessibility	Use Pattern
Court house	Yes	Public transport	33.9%
Chief palace	Yes	Walk	70.6%
District Assembly Office	Yes	Public transport	56.9%
Gov't Dep't/ agency office	Yes	Public Transport	47.7%
Political party office	Yes	Public transport	9.2%

There is no question about the presence of facilities that gold mine workers can draw on to address their governance needs. Additionally, those facilities appear to be accessible. Among the list of facilities that can be used to address governance needs, the chief's palace is used by almost three-quarters of gold mine workers. Political party offices are utilized by less than 10% of timber workers, which is low and raises the question of how political needs are advocated for by gold mine workers. At the same time, gold mine workers are unionized, which means they have other avenues through which their interests may be represented.

To sum up, rent extraction from the gold mining sector has poverty implications for gold mine workers. At least from the two towns surveyed, about 22% of workers are living in poverty. Other factors drive poverty, which I acknowledge, but just like the cocoa farmer, or the timber worker, gold mine workers are dependent on salary earned from working for a gold mining company. In addition to the income distribution among

gold mine workers, their basic living conditions show several bright spots. The existence of schools and hospitals and government institutions in these two town means that there is a certain amount of social provision which gold mining workers can use to address their education, health, economic and governance needs.

Summary of Key Points from the Gold Mining Sector

1. The policy choices are the following: state retention of the rights to gold; no state enterprise for the mining gold but instead the use of private mining companies; and the use of a fiscal regime consisting of taxes and fees as opposed to price-fixing mechanism as the primary mechanism for extracting rents from the sector.

2. There are several characteristics driving policy choices in the gold mining sector, including the fact that gold is a natural resource, state capacity to successfully undertaking gold mining is limited; the nature of gold; the difficulty of attempting any price fixing; and the contribution to the economy.

3. The policy choices also carry with them implications for the material well-being of gold mine workers, such as the trappings of poverty and basic living conditions for some.

Chapter 6: States and Resource Endowments—Where Do We Go From Here?

What difference does it make to the resource sector if the state uses its policy choices to seek greater control? What difference does it make if through the policy choices the state has less control over the resource sector? What do the policy choices of the state in the three sectors examined reveal about the character of the state? How is our understanding of state policy choices and resource development illuminated by our understanding of the state as well as the notion of the resource curse? What are the shortcomings of previous attempts to decipher why the state chooses certain policies? Do certain policy choices offer better return on the resource than other policy choices? What have these sectors revealed as the areas needing further study on this issue of state policy choices and the management of resource endowments for development purposes? Is it better for the state to be less controlling? In this chapter I explore the answers to the above questions, drawing on the insights from the detailed examination of the policy choices, implications and consequences in the cocoa, timber, and gold mining sectors in Ghana. The table below summarizes the policy choices, key sector characteristics, and enabling factors that help shape and sustain the choices made by the state.

Table 53: Summary of Underlying Basis of State Policy Choices

Key Decision Point: Point of Ownership			
	Cocoa	***Timber***	***Gold***
Policy Choice	No retention of ownership rights	State retains ownership rights	State retains ownership rights
Key Sector Characteristic	Type of Resource	Type of Resource	Type of Resource
Enabling Factors	Land tenure Historical antecedents Socio-economic profile of cocoa farmers	Historical antecedents Land tenure	Land Tenure
Key Decision Point: Point of Production			
	Cocoa	**Timber**	**Gold**
Policy Choice	No use of a state-owned enterprise. Privately grown	No use of a state-owned enterprise. Use of private timber companies for timber harvesting	No use of a state-owned enterprise. Use of private gold-mining companies to mine gold
Key Sector Characteristic	Contribution to the economy	State Capacity	State Capacity
Enabling Factors	State Capacity State investment Size of Alternative actors	Historical antecedents Contribution to economy Presence of Alternative actors	Historical antecedents Contribution to economy Presence of alternative actors
Key Decision Point: Point of Sale			
	Cocoa	**Timber**	**Gold**
Policy Choice	Use of producer price fixing	Use of a guiding price mechanism	Use of a fiscal regime
Key Sector Characteristic	Dependence for foreign exchange	Revenue maximization	Lack of foreign exchange imperative
Enabling Factors	State capacity Nature of the actors Long term reliability Price fluctuations	Nature of the actors State dependence State capacity	Nature of gold and gold pricing Historical antecedents Choices at the point of production Mining agreements

The Utility of Previous Answers to Central Question of This Dissertation

The table above summarizes the key sector characteristics and enabling factors that shape the policy choices of the state in the cocoa, timber and gold mining sectors in Ghana. It is against this backdrop that I weigh the utility of previous answers that have been provided regarding the central question of importance to this dissertation. As pointed out in Chapter 2, there has been little work in the area Luong and Weinthal (2001) call "the prelude to the resource curse," where the strategic/policy choices of the state regarding how to develop resource endowments are subjected to scrutiny to ascertain why those choices are made. I used three studies (Bates 1981; 2005; Luong and Weinthal 2001; Thurber, Hults, and Heller 2010) as important launching pads for my examination of the policy choices in the area of cocoa, timber, and gold within the Ghanaian context. In this section, I weigh the utility of the answers provided by these three studies against the insights gained from my research into cocoa, timber, and gold. To recap, the three studies serving as reference points provide the following answers:

a. Politics plays a central role when states are choosing policy options for resource endowments. States are sensitive to politics in three ways: first, which group(s) provides the most political support for its hold on power; secondly, which key groups compete over the resource; and finally how that state steps in to resolve that competition.

b. State capacity matters to the particular choices the state makes. The state, ideally, takes on the things that it can do well and cedes control over things it cannot do well.

c. The presence of alternative revenue sources matter to the choice of the state. Where there are alternative resources the state can turn to, it exerts less control as opposed to more control.

There is no denying that the state is sensitive to its political environment in its choice of actions. At the point of production in the timber and gold mining sectors, the decision to nationalize certain timber and gold-mining companies was a politically motivated decision with the goal of ensuring that the state provided employment for citizens. Additionally, it was driven by the idea that an independent state had to demonstrate its independence (Agyeman, Gyan, and Oduro 2007). Since some of the major companies were still controlled by foreign investors, it is logical enough that the state would pursue such actions of nationalizing private timber and gold-mining companies. The bigger question, however, is in looking at cocoa, timber, and gold, does the state draw on political support from one particular sector more than other sectors? The answer to this question will provide a sense of the political clout wielded by the each of the actors in the sector (cocoa farmers, timber workers, or gold mining workers). In the survey I conducted, 60.6% of the respondents strongly agreed or agreed that the stakeholders in the cocoa sector do influence state policy choices regarding the sector, compared to 48.5% of respondents in the timber sector and 66.7% from the gold mining sector. On the face of it, this means that the state should be more responsive to the demands of the cocoa sector and the gold mining sector but less so to the timber sector, which should translate into less state control in the first two sectors (cocoa and gold) and more control in the timber sector, especially when it comes to rent extraction. However,

if the policy choices are judged in terms of state control, the state in Ghana wields greater control at the point of sale in the cocoa sector than it does in timber and gold mining sectors, which goes contrary to what the survey results suggest. Additionally, Ghana has been holding elections since 1992, which should give another avenue through which the political clout of these sectors can be judged. For example, what is the pattern of voting among cocoa farmers? Are they aligned in a particular way where the major political parties are concerned? The same question goes for timber and gold mine workers. These are all very difficult questions to judge because the politics of group interest do not reflect this phenomenon just yet in the Ghanaian context. Even if a proxy measure (such as how the regions where the resources are located vote) is used, it will be very difficult to make those judgments because it is not as though the two major political parties competing for power have drastically different ideas of how these sectors should be organized. For example, the use of price fixing to extract rents from the cocoa sector cuts across both democratically elected governments and periods of military rule. The use of non-price-fixing mechanisms to extract rent from the gold mining sector again cuts across types of governments. The state uses strategies such as farmers' bonuses, spraying cocoa farms for free, and scholarship schemes for the children of cocoa farmers as ways of ensuring that farmers stay relatively quiet. Another strategy used is the regular increases in the producer price of cocoa, which has been evident regardless of the type of government or political party running the state. It is also very intriguing that cocoa farmers have just been pressing for increased producer prices without resorting to the positive action taken by farmers in the 1930s when farmers withheld their crops and

subsequently burned them in response to the low prices offered for cocoa beans. So in the end when we see the consistent patterns of behavior on certain key things around these resource sectors, it becomes a bit difficult to isolate and elevate the role of politics in shaping the state choices. I do not reject the political motivations of the state; I just question the extent to which the studies I reference elevate their importance in driving state policy choices without other enabling factors working to sustain those choices.

On the question of state capacity, the previous studies I cite are right to assert that state policy choices factor in the state's capacity to undertake the key activities in these resource sectors. States choose less control when their capacity is limited and choose greater control when their capacity is unlimited. At the point of production, the use of private actors to grow cocoa, harvest timber, and mine gold is an illustration of how state capacity drives the state to opt for a lesser degree of control. On the other hand, the retention of rights and the creation of entry boundaries in the timber and gold mining sectors indicate the capacity of the state to manage those entry barriers.

Furthermore the answer of alternative sources of revenue does not necessarily drive the state to seek less control over the resource sector. The existence of alternative sources of revenue must be viewed in relation to the extent to which the state can depend on that alternative resource. For example, the state tightly controls the cocoa sector at the point of sale even when there is revenue to be earned from timber as well as gold. However, for the reasons discussed in the previous chapters, the imperative is greater in the cocoa sector because the state depends on it as a guaranteed source of revenue. So it is very important to highlight not just the existence of alternative resources but also the

extent to which the state depends or can depend on those alternative sources of resource revenues.

The Utility of Dissertation Findings To The Broader Literature

I will now proceed to discuss the added insights I believe this dissertation research contributes to the broader literature on not just the resource curse but also on state policy choices in managing resource endowments.

The Character of the State. In a state where the resource endowment is diverse and the state relies on more than one of those resources for rents, the character of the state cannot be monolithic. Even within the same resource sector, the state modifies its behavior as it moves across key dimensions of the decision-making process. The literature on resources tends to look one type of resource (minerals, oil and gas resources), thus creating the impression that it is these types of resources that leads to the resource curse. From a single resource perspective, the character of the state emerges as a monolithic state motived in its policy choices by a very limited set of considerations. A reading of Bates (1981; 2005) portrays a state driven mainly by political considerations, thereby concentrating its efforts at the point of sale in order to extract rents from an agricultural export commodity like cocoa. A reading of Luong and Weinthal (2001) portrays the state as being driven by state capacity and political considerations as it attempts to make decisions at the point of production. However, when there are multiple levels of decisions to be made, regarding multiple resource sectors, a monolithic view of the state may not suffice. As identified in this dissertation, the state must contend with three key levels of decisions—ownership, production and sale. At the point of ownership, the state has to

decide whether to retain rights to the resource. At the point of production, the state must decide whether to set up a state-owned enterprise or to use private actors for the extraction of the resource. At the point of sale, the state must decide how it wants to extract rents from the resource in order to realize the economic value of its resource endowments. At each of these decision points, there are several other embedded questions the state must wrestle with. This means that any given policy choice of the state is more likely to be a reflection of a several considerations than of a single consideration. These considerations are what I have referred to as the key sector characteristics and enabling factors. Even if there is a key reason that drives state policy choice, the sustainability of that policy choice through time means that there are enabling factors that have sustained the policy choice across the years. For example, the state has been fixing producer prices for the cocoa sector for more than 50 years. The key motivator, as uncovered during the research, is the dependence on the sector for foreign exchange. However, to explain the cocoa sector away and the policy choices of the state as solely motivated by the dependence on foreign exchange presents an incomplete picture of the state. True as that may be, that dependence on foreign exchange and thereby the choice to use price fixing to extract rents from the sector is enabled by several other factors. As the state moves within a single sector, it confronts different opportunities and constraints which shape its decisions at key junctures. In the cocoa sector, the state is motivated by a different set of considerations at the point of ownership which changes at the point of production and changes further at the point of sale. The same happens as the state encounters each of these key decision points in the timber sector or the gold mining

sector. When the character of the state is compared across the resource sectors, the multidimensional character of the state is further revealed. At the point of ownership, the type of resource is a key characteristic driving the state to retain or not retain rights to the resource. Yet we see the state moving in one direction with cocoa, because it is not a natural resource, but moving in the same direction with timber and gold, because both are natural resources. However, even when it moves in the same direction with timber and gold because they are both natural resources, the modalities for retaining rights to the resources are different. In the timber sector, the state retains rights to the resource, holding it in trust for the stool lands, while with gold the state retains the rights to the resource in trust for the people of the Republic of Ghana. At the point of sale, across the sectors, again the state draws on very different mechanism to extract rents from each of the sectors and is motivated by very different considerations. The multidimensional nature of the state as it moves within and across sectors does not obscure the fact that there are occasions where the state may be motivated by similar considerations across different resource sectors. At the point of production, cocoa is grown privately, timber harvesting is done by privately owned timber companies, and gold mining is done by privately owned gold-mining companies. The state therefore makes the same policy choice across three different resource sectors. Additionally, the state is driven by a similar concern, which is its capacity to undertake successfully the key activities at the point of production in each of these sectors. The history of state involvement at the point of production, which has shown very poor results, enables the sustaining of this policy choice. Overall, though, the character that emerges is one of a multidimensional state

driven by different opportunities and constraints as it decides on the appropriate policy choices for managing its resource endowments.

Why is it important to understand this multidimensional character of the state? The focus on a single resource type at a single decision-making point in the resource curse discourse obscures the dynamic nature of the state. The current discourse, with its focus on a single type of natural resource at a particular key decision point, fails to show the whole character of the state in making policy choices regarding resource endowments. Also, the focus on natural resources, especially minerals and oil, to the exclusion of forest resources such as timber and agriculture such as cocoa, further obscures this character of the state. Ghana earns substantial rents from cocoa, timber, and gold and therefore a focus on gold alone may hide other important dimensions of the state that may be very important in understanding how policy choices help or hurt the resource sectors upon which a given state depends upon for rents. If one thinks of the particular sector characteristics driving state policy choices as opportunities and constraints, then this careful unpacking of the state to reveal its multidimensional character becomes important in addressing any policy reforms that may be needed in the sector. This means that how reform efforts approach the state at the point of ownership in cocoa may not be the same way the reform efforts approach the state at point of production or sale, even in the same sector let alone across the other resource sectors. Take the policy of liberalization, for example, which argues for a pulling back of the state and the greater involvement of private actors in various sectors of the economy. When these three resource sectors are examined within the context of liberalization efforts in Ghana, the

state has pulled back at the point of production in timber and gold by privatizing state-owned mining companies and timber companies. At the same time, the state has pushed back against full liberalization of the cocoa sector, particularly at the point of sale, where it continues to use producer price fixing to extract rents from the cocoa sector. The state has gladly embraced privatization at the point of production but rejects it for a particular sector at a particular decision point. The state was constrained by its capacity in the timber and gold mining sectors and therefore embraced the opportunities provided by privatization and embraced it to revive those sectors, especially the gold mining sector. However, the same state does not feel the same set of constraints in the cocoa sector at the point of sale and therefore sees no opportunities in embracing a liberalized policy where it ceases to use producer price fixing to extract rent from the cocoa sector.

Understanding the Level at Which the Resource Curse Occurs. The table below presents data on a number of selected development indicators, which are important to illustrate the point of the dissertation with regards to how this study enhances understanding of the level at which the resource curse occurs.

Table 54: Comparison of Ghana to Botswana and Cameroon on Selected Development Indicators, 1960-2012

Indicators	Ghana	Botswana	Cameroon
Average GDP growth (%)	3.4	8.9	3.5
Average per capital income growth (%)	0.8	6.0	0.8
Progression to secondary school (%)	91.6	76.7	26.8
Improved sanitation facilities (% of population with access)	10.2	51.3	48.6
Improved water source (% of population with access)	70.2	94.9	63.9
Primary completion rate, total (% of relevant age group)	68.4	78.7	55.0
Life expectancy at birth, total (years)	54.4	56.4	49.3
Infant mortality rate (per 1,000 births)	87	59	102

Source of data: World Bank, World Development Indicators.

I picked Botswana mainly because it is often touted as sub-Saharan Africa's "success story" of a country that has managed to avoid the resource curse. I picked Cameroon because it exhibits a number of characteristics similar to Ghana, such as the structure of its exports, population size, and regional location. The traditional resource curse literature looks at the presence or absence of the curse in terms of the rate of economic growth. On average, Ghana has a 3.4% percent growth rate compared to Botswana's 8.9% and Cameroon's 3.5%. Judged alone, does an average 3.4% growth mean that Ghana is cursed by her resources of cocoa, timber, and gold? When compared to Botswana, at face value, it is tempting to conclude that Botswana has made good use of its resource endowments when compared to Ghana, although there are several other factors explaining this key difference on growth between the two countries. When compared to Cameroon, it appears at face value that both countries are experiencing the same level of growth and we are therefore unable to declare Ghana cursed in comparison

to Cameroon. The story is the same when the basis of judgment is per capita income. On the other indicators presented in the table the picture is mixed, with Ghana sometimes appearing to be resource-cursed and in other instances appearing not to be resource-cursed. For example, when compared on the indicator of percentage progressing to secondary school, Ghana outperforms Botswana and Cameroon. However, when compared on the indicator of percentage of population with access to improved sanitation facilities, Botswana and Cameroon outperform Ghana. The picture that emerges here is that describing Ghana as resource-cursed or not is a reflection of the comparison country and the comparison indicators. Besides, using the traditional basis of judgment for the curse is inadequate because the economy of the country consists of various sectors. Cocoa and timber are subsectors within the agricultural sector (an odd coupling because both resource types are different but for policy reasons are captured in the same subsector) while gold is a subsector of the industrial sector. Economic growth is spurred by all the activities within the main sectors as well as the subsectors, which makes it challenging to isolate just the effects of cocoa, timber, and gold on the overall rate of economic growth. I do not dismiss that there are consequences where state policies chosen to manage resource endowments are concerned; it is the level at which those consequences are examined that is the key issue. I argued at the beginning of the study that a more informative way to look at the resource curse is the consequences of state policy choices for the state as well as for those whose livelihoods depend upon their work in the resource sectors. In terms of the state, the key interest of the state is primarily rent extraction while for the non-state actors it is the income that allows them to afford a basic

decent lifestyle. The question, therefore, is how has the dissertation and its approach helped in making some assessments of the consequences to the state and non-state actors?

The rent-extraction mechanisms used by the state put the state in a very favorable position in the cocoa sector and the timber sector, but not so much in the gold mining sector. The use of price fixing by the state, in addition to being the sole exporter of the crop from Ghana, allows the state to buy at a price lower than what is offered on the world market, thereby allowing the state to accumulate the difference in surplus. Even when the state argues that cocoa prices are subject to price volatility, the fact that the state buys below the world market price from the cocoa farmer still puts the state at an advantage, although it does reduce the total surplus the state can accrue. Moreover, even as the argument was repeatedly made in the course of the research that cocoa presents a guaranteed source of foreign exchange, the state still has alternative sources of revenue from timber, and to an extent gold, in the event of dwindling revenues from cocoa. The use of price fixing then does not present a "curse" situation to the state in the cocoa sector. Turning to the timber sector, the rent-extraction mechanism used allows the state to maximize rents from the sector. Not only does the state issue a guiding price based on market prices, it adds an element of pricing regulation in which all timber export contracts are vetted by the state to ensure compliance with the guiding selling price. In such a scenario, the state ensures that timber companies are selling at prevailing market prices. Additionally, the timber companies are allowed to keep only 10% of the foreign exchange from timber exports, which means that the bulk of the foreign exchange earned in the timber sector accrues to the state. The state is therefore at an advantage and is again

not “cursed” in terms of rent extraction for foreign exchange earning purposes. The gold mining sector is where the state encounters a “curse” situation as a result of the mechanism used to extract rent from the sector. As noted in the chapter dealing with the gold mining sector, there is no price-fixing mechanism or even price regulation in the export of gold. In addition, the foreign exchange retention percentages allowed are negotiable by the gold-mining companies, which leaves the state still vulnerable to how much it is able to accumulate in foreign exchange earnings from the sector. While the state imposes a key rent— royalties—on the sector, there are major challenges with that as well. Since it is a production-based and value-based as well, the state never assesses the rate on the true value of the gold won since, as I learned through the research, further refining of gold is done outside of Ghana. This means that the royalty rate is never assessed on the final value of the gold, which shortchanges the state. The state is therefore more vulnerable to the “curse” in the gold mining sector.

The other consequence of state policy choice is the manifestation of the “resource curse” for those whose livelihoods depend on work in these resource sectors. If we look at the cocoa sector as discussed in Chapter 3, the income and basic living conditions are lost in any discussion of economic growth. My dissertation research spanned a period of 18 months in 2011 and 2012. In 2011, Ghana’s GDP growth was 7.9%. In 2011, the annual growth rate was 15.0%. Such a growth rate masks the challenges faced by those whose everyday lives depend on working in the resource sector. Of the cocoa farmers I surveyed as part of the research, 57.1% of them (based on self reported income) potentially live in poverty or extreme poverty situations. If the reported income is judged

against the minimum daily wage in Ghana in 2012, 64.6% live below that minimum wage. When we look at the basic living conditions of cocoa farmers, where they use public open pit latrines as toilet facilities, and lack tap water as a source of drinking or bathing water, a different understanding of the resource curse emerges, which is missing when the sole focus of the resource curse discourse is the rate of economic growth. A look at the timber sectors based on self-reported income shows that 64.3% of timber workers and their households potentially live in extreme poverty with another 22.9% living in poverty. When the income is measured against the daily minimum wage in 2012, at least 87.2% of timber workers and their households live below the daily minimum wage. Finally, drawing on the gold mining sector, self reported income shows that 11.9% of gold mine workers and their households potentially live in extreme poverty with another 9.2% living in poverty. When the self reported income is judged against the minimum living wage in Ghana in 2012, when this survey was conducted, about 30.3% of gold mine workers and their households live below the daily minimum wage. The point here is that a focus on economic growth rates obscures other manifestations of the resource curse, which may manifest itself in terms of rents earned by the state but also as the effect on the income and other basic living conditions for those workers whose livelihoods depend on working in these resource sectors.

Understanding the Trajectory of the Resource Curse. Related to the above discussion is the point at which dependence on resources becomes a curse both to the state as well as cocoa farmers, timber workers, and gold mine workers. I situated my study in the strand of the resource curse literature which argues that resource endowments can lead to

positive or negative outcomes depending on a number of key conditions—policy choices, behavior of political actors, quality of institutions, etc. This strand also points to how these conditions produce or avoid the resource curse. For example, when looking at policy choices this strand points to whether the state has policies to manage revenue that accrues from the sale of these resources, especially since these resources go through cycles of boom (increased revenue) and bust (decreased revenue). If the state implements the right policies and manages to save during periods of increased revenue, then in periods of decreased revenue, it can fall back on those savings. This does not leave the state cash-strapped and ultimately susceptible to the curse. However, if the state does not have the right policies in place to manage cycles of increased revenue, then in periods of decreased revenue, there will be no fallback options for the state, thus leading to negative consequences. The approach of the resource curse discourse in which the focus is on single decision points (point of production or point of sale) does not address an important point of interest to this dissertation which is, where do states put themselves on the trajectory of the resource curse? At what point do policy choices start becoming a curse either to the state or to the workers whose livelihoods depends on work in these sectors? This is what I argue as the advantage of this multi-level approach to understanding resource sector management—tracing the beginnings of the resource curse. Looking back the gold mining sector and the decline that gripped the sector from the 1960s up to the reforms initiated in the mid-1980s, resulting in low revenues, low production and the near collapse of the state-owned mines and mining corporation, the process began at the point of production. At the point of production, the state embarked on a policy choice that

nationalized mining companies and took control of major mines. This had several effects, including discouraging foreign investment. At the same time, the state gold mining corporation showed it lacked the capacity to successfully undertake gold mining, thereby leading to very low gold production. Low gold production meant a reduction in the amount of rents that could be extracted from the resource sector. For the state, then, the pathology of the resource curse occurs in part at the point of production. This does not mean that at the point of sale, where the state is extracting further rents, there are no consequences to the state in terms of how I view the resource curse. There are, but the manifestations of the curse occur well before the point of sale is reached. For the gold mine worker, the manifestation of the resource curse occurs at the point of production, which is where they expend their energy and earn a monthly income. The timber sector, as discussed, also witnessed a period of decline during the nationalization period, with state-owned timber companies failing to successfully undertake the activities at the point of production. Low production means lower rents to extract from the sector, thereby setting in the consequences to the state. For the timber worker, the resource curse manifests itself at the point of production as well. That is where he or she expends time and skills and earns a monthly income. The story changes for the cocoa sector. The dynamics of the cocoa sector appear to shift the resource curse entirely to the cocoa farmer. Yes, low cocoa production means less rent for the state to extract at the point of sale but the state still has timber and gold to extract some rents from, in addition to other sources of revenue and, as a last resort, the ability to borrow. The cocoa farmer encounters the resource curse at the point of sale. That is the point at which the cocoa

farmer is turning over the cocoa beans to the state at a fixed producer price. Additionally, the only option the cocoa farmer has is the choice of which licensed buying agent the crop will be sold to, not the price at which it will be sold. The size of the income earned, as a reflection of the farmers output, at the point of sale is where the farmer begins to realize that the efforts put in at the point of production are turning out to be a resource curse.

The ultimate point is this: in order to properly address the curse as it affects the state or the livelihoods of those who depend on the resource, where the curse begins to manifest itself must be the initial focus of any policy reforms. For example, to help lift the cocoa farmer out of the poverty that comes from depending on cocoa, one of the key things that must be done is better prices for cocoa (which will occur at the point of sale). For the state to avoid the resource curse, for example, efforts in timber and gold must focus on what happens at the point of production. The resource curse literature tends to prescribe solutions without pinpointing at which decision-making level those solutions must be applied.

More State vs. Less State. The particular direction in which the states goes in terms of its policy choices gives it more control or less control over the sector. At the point of ownership, the state has less control in the cocoa sector because it retains no ownership rights to the resource. In the timber and gold mining sectors, the state retains ownership over the resource, sets up entry barriers and thereby gains greater control at that decision point. At the point of production, because there is no state-owned enterprise set up to grow cocoa, harvest timber, or mine gold, I argue that this policy choice gives the state

less control over the resource sectors at this key decision point. I must add that the state still has regulatory oversight in the case of timber and gold, but generally all the decisions that have to be made to ensure that timber is harvested successfully or gold mined successfully are up to the timber or gold mining company. At the point of sale, because the state uses price fixing as the primary mechanism for extracting rents from the cocoa sector, the state has greater control at that decision point in the sector. In the timber sector, the state's control is more of a hybrid situation in that the mechanism used to extract rent is not price fixing. However, the state issues timber companies a guiding selling price and vets all sales contracts to ensure that timber companies do not deviate too much from the stated guiding prices. In the gold mining sector I consider the state to have less control, since it does not use a price-fixing mechanism to extract rents from the gold mining sector.

Does state control matter? Yes. Is it better for the state to have greater or lesser control in the resource sectors? I answer that question with "it depends." As a result of the waste that resources have been subjected to or the negative consequences of state actions, there is the tendency to dismiss the role of the state and demand less control. Bates (1981; 2005) is weary of the role of the state and would argue for a reduced role for the state at the point of sale in a sector like cocoa. Not only does Bates take issue with the efficiency of the arrangement of using price fixing to squeeze rents out of a sector such as cocoa, he believes it unduly takes advantage of the cocoa farmer. I concede Bates' point but only to the extent that it depends on where greater state control is exercised. I agree with Bates that greater state control has negative consequences for cocoa farmers. The

farmers I surveyed for the research, when compared to gold mine workers, fare worse on household income and basic living conditions. Timber company workers, on the other hand, have less income than cocoa farmers but have slightly better living conditions. I am not entirely sure the extent to which less state control would alter the lives of cocoa farmers, but Bates is right in his assertion. However, the fact that greater state control at the point of sale in cocoa spells disaster for cocoa farmers does not mean that by extension greater state control spells doom for all the sectors as well. The state's history of failure at growing cocoa, harvesting timber, or mining gold makes less control of the state at the point of production the appropriate policy choice for the state. Non-state actors have proven more successful than the state in growing cocoa, harvesting timber, or mining gold. However, I reject any policy choices that will give the state lesser control over timber and gold at the point of ownership. As described previously, these are natural resources that happen to be concentrated at particular geographic locations in the country through the accidents or design of nature. This means that no one group has particular claim to the resource. In order for the resource to be protected and in particular to be used for the potential benefit of all in society, the control exercised by the state and the setting up of entry barriers is very important. The overall point here is not to treat state control as an either/or proposition but rather as a menu of options to be deployed in greater or lesser control where appropriate in the resource sector.

State Policy Choices Matter But that Is Only Half the Story. State policy choices matter and they manifest themselves in positive or negative ways at different points in the resource sector. As I pointed out in the second chapter of the dissertation, the strand of

the literature in which this research is situated points to the importance of certain conditions whose presence or absence leads to or avoids the situation commonly referred to as the resource curse. In my review in Chapter 2 I point to those conditions as policy choices, institutions, behavior of political actors and relationships among groups in society. I focus exclusively on the role of policy choices in managing resource endowments. However, I recognize that ultimately policy choice is only one dimension of the various dynamics shaping the eventual outcomes observed in resource sectors. For example, the state retains ownership rights to timber. However, the policy choice requires institutions through which state actions regarding this policy choice will implemented. This means that the state needs institutions that oversee the entry barriers it erects at the point of ownership in order to ensure that only those granted rights to timber access the timber. At the same time, these institutions will have to be staffed by bureaucrats who will have to provide the needed oversight for the resource sector and enforce the institutional arrangements. The institutions must work, which means bureaucrats charged with enforcing rules regarding access to the resource must do so in a manner devoid of corruption or favoritism. In everyday terms, this means that in the timber sector, forestry officers can not overlook cases of illegal chainsaw activities in forest areas. Stumpage fees must be collected and defaulting companies must be held accountable. In vetting contracts, due diligence must be used to ensure that timber companies are in compliance with the guiding selling price. The same principles apply in the gold and cocoa sectors. In the gold mining sector, state officials must deal with all cases of illegal gold mining and, in the case of cocoa, state officials must deal with all cases of cocoa smuggling. The point

is that policy choices do not work in isolation; they need strong institutions and capable individuals to ensure their success in the resource sector. In the end, the conditions necessary for the avoidance of the resource curse work in and have an interactive effect on the resource sector as opposed to working in isolation of one another.

Implications of State Policy Choices and Levels of State Control

Implications for the Cocoa Sector

Entry Barriers. In the cocoa sector, because the state retains no rights to the resource at the point of ownership, there is easy entry into the sector. Cocoa-growing is an important economic activity not only for the state, but also for families, especially those in rural areas. Making the entry easy at this point allows many people to engage in productive economic activities and earn a livelihood for themselves and their families.

State Capacity. As the section on point of production has shown, the state's capacity to successfully grow cocoa is called into question by the failure of Ghana Cocoa Board's plantations. Leaving cocoa largely in private hands allows the successful growing of the crop while at the same time provides benefit from the important investments the state makes in the sector.

State Vulnerability to Producers. In choosing to let cocoa be a largely privately grown undertaking, potentially the state leaves itself at the mercy of producers. Cocoa, as shown in the Point-of-sale section, is very important for rent extraction. The policy choice where the state is not directly involved in the growing of cocoa means that the state counts on cocoa farmers to be constantly engaged in growing cocoa. Any interruptions in the production process create problems for the state at the point of sale

because of the impact on the amount of rents that can be generated. This further means that the state has to be constantly vigilant to ensure that production is ongoing. The state's strategy of investing heavily at the point of production through measures such as pest and disease control, providing free seedlings to farmers, and other incentives ensures the continuity of cocoa-growing.

Maximization of Rent Extraction. The use of the producer price-fixing mechanism gives the state the fullest assurance of maximizing the rents it receives from the cocoa sector. This is especially important for the state because of the extent to which it depends on the cocoa sector for foreign exchange. On the other hand, the use of producer price fixing poses the danger of over-extraction of revenue from cocoa farmers. As a result of the foreign exchange needs of the state, as well as the need for revenue to run the operations of the Ghana Cocoa Board, it is always tempting to pay the farmer the lowest price possible so that there is enough in the margin for the state to retain. Under such a scenario, the state ends up over-extracting rents from the cocoa sector. In addition to price fixing, there is an export duty tax on cocoa, which is extra rents the state draws from the sector. Too much rent extraction could turn into a disincentive for engaging in growing cocoa.

Creation of Perverse Incentives. In the cocoa sector, one of the major challenges faced by the state is the smuggling of cocoa beans into neighboring Ivory Coast. Usually, cocoa smuggling is attributed to cocoa farmers in search of better producer prices. The use of price fixing creates perverse incentives where farmers begin to engage in cocoa smuggling. The problem with cocoa smuggling is that, if left unchecked, it lowers

Ghana's total volume for exports, with implications for how much rent can be extracted from the sector. A low volume of exports means low foreign exchange earned from cocoa exports. The result is that the state must invest resources into curbing the practice. The stories cited in the table below illustrate state institutions striving to curb the problem of smuggling in the cocoa sector. The cocoa sector is very important to the state, so while the state's capacity to regulate in other sectors may be found wanting, it has all the incentive to ensure that it is very effective in the cocoa sector.

Table 54: Examples of State Institutions in Action—The Cocoa Sector

Story	Source	Link
240 million Ghana cedis loss of revenue due to cocoa smuggling	GBC News, 02-15-2013	http://www.gbcghana.com/index.php?id=1.143295 February 15, 2013.
Ghana Immigration Services probing of officers alleged to be involved in cocoa smuggling across the border to Ivory Coast	Citifm Online 12-14-2011	http://www.citifmonline.com/mobile/index.php?id=1.699205 February 15, 2013.
Quality Control Division of Ghana Cocoa Board and the decision to tighten cocoa quality controls to curb smuggling of low quality beans from Ivory Coast	Ghanaweb News Archive T'Sas, Vincent November 11, 1999	http://www.ghanaweb.com/ghanahomepage/economy/artikel.php?ID=9002 February 15, 2013.
State Officials from Ghana and Ivory Coast formation of a joint committee to regulate price differentials in cocoa to check cocoa smuggling across the border into the two countries	Ghana Business News 01-31-2012	http://www.ghanabusinessnews.com/2012/01/31/ghana-ivory-coast-form-joint-committee-to-regulate-price-differentials-check-smuggling-of-cocoa/ February 15, 2013.
Interception of 148 bags of cocoa being smuggled and subsequent handing over the bags to Ghana Cocoa Board	Ghana districts News June 15, 2011	http://www.ketunorth.ghanadistricts.gov.gh/?arrow=nws&read=41496 February 15, 2013.
Interception of 826 bags of cocoa being smuggled from Cote d'Ivoire into Ghana by the Ghana Cocoa Board Anti-Smuggling Task Force in the Jomoro District.	Ghana Business News April 18, 2011	http://www.ghanabusinessnews.com/2011/04/18/task-force-intercepts-smuggled-cocoa-beans/ February 15, 2013.
Arrest of 8 security officers and a custom officials on allegations of aiding cocoa smuggling	Ghanaian Times April 10, 2011	http://newtimes.com.gh/story/9-security-officers-arrested-over-cocoa-smuggling February 15, 2013.
The placing of a ban on three cocoa marketing companies by the Ghana Cocoa Board for engaging in smuggling activities.	Ghana Districts News Bia District Archive February 15 2013	http://bia.ghanadistricts.gov.gh/newsdetails.php?id=34352 February 15, 2013.
Arrest of 4 individuals attempting to smuggle cocoa into Ivory Coast	Modern Ghana 11-03-2009	http://www.modernghana.com/news/247065/1/cocoa-smugglers-arrested-in-western-region.html February 15, 2013.
Arrest of cocoa purchasing clerk on allegations of attempting to smuggle cocoa to Ivory Coast	Ghana News Agency January 14, 2010	http://www.ghananewsagency.org/print/11362 February 15, 2013.

Implications of State Policy Choices in The Timber Sector. To recap, the state's policy choices in the timber sector are as follows: retention of rights to the resources at the point of ownership; no organization of a state enterprise to undertake timber harvesting since the state instead chooses to use private timber companies at the point of production; and the use of a guiding selling price and vetting of wood export contracts for compliance as the primary mechanism for extracting rents from the timber sector at the point of sale. What, if anything, do all these policy choices do to shape what occurs in the timber sector? In this section, I examine a few implications of the policy choices of the state in the timber sector.

The Use of Natural Resources. The figure below is a map of Ghana, showing the regional distribution of the three resources of concern to this study. The middle map shaded in green shows the regional distribution of timber. Three regions have high concentrations of the resources as depicted by the deep green shading, with two other regions, shaded light green, having a lighter concentration of the resource. The map shows five remaining regions without the resource. 58% of the population as of the 2010 census lives in one of the five shaded regions, and 42% in the unshaded regions.

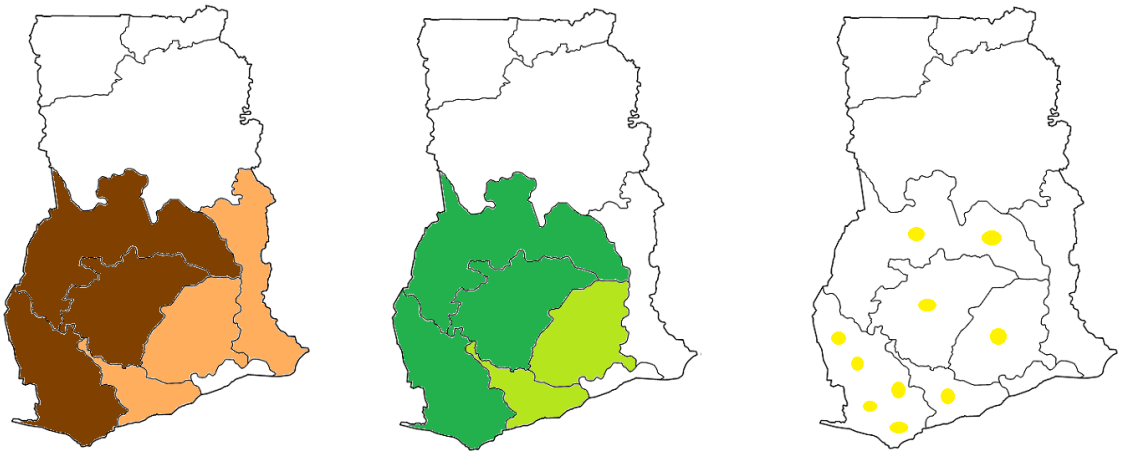
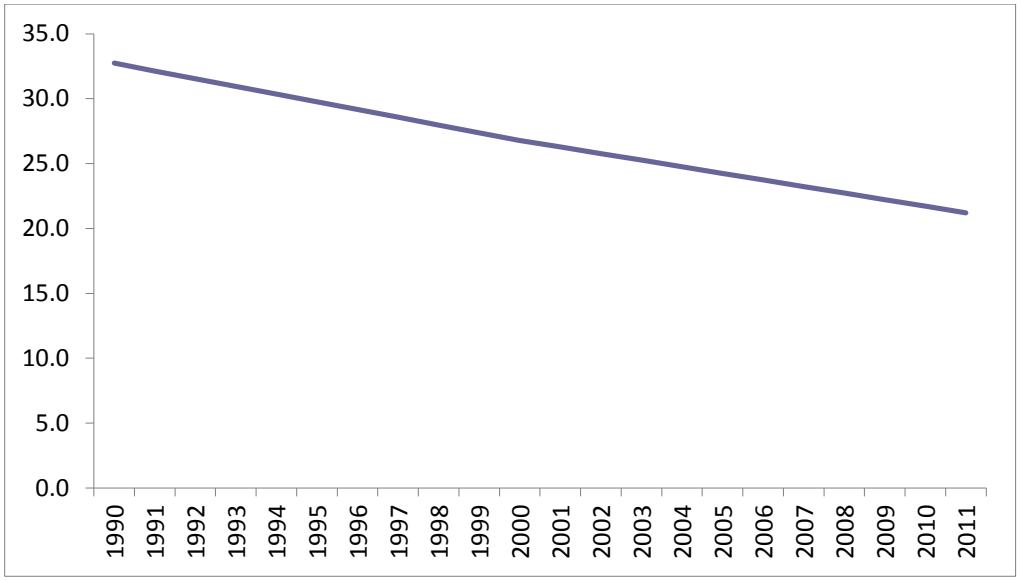


Figure 5: Regional Distribution of Resources in Ghana

The map shows that if the rights to timber were to be localized, 42% of the population could be excluded from sharing in the benefits of a natural resource. The exclusion would be the result of the accidents of history, due to which those people happen to inhabit a part of the country without that resource. The state's approach to the sector, both in retaining the rights to the resource as well as the various methods of rent extraction, ensures that as a matter of principle no part of the population is excluded from the share of the resource. It is interesting, however, that the state retains the rights to the resource, holding it in trust for the stools as opposed to holding it in trust for the entire country. Ultimately though it is very important that the policy choice creates a situation where the entire population, rather than a segment of the population, is able to share in the resource.

The Importance of Entry Barriers. The state retaining ownership rights to timber creates a set of entry barriers where seeking rights to the resource involves a very

elaborate process and compliance with several rules and regulations. In principle, an entry barrier allows for the responsible management and use of the resource. Agyeman, Oduro, and Gyan (2007) describe the rapid rate of forest resource utilization in their tracing of the legislative history of the timber industry and how concerns about forest resource protection and responsible use became the basis for various ordinances and legislation dealing with forest resources in Ghana. In the graph below I show the rate of forest depletion based on World Bank data regarding forest areas as a percentage of land area.



Source of Data: World Bank World Development Indicators

Figure 6: Forest Area as a Percentage of Land Area, 1990-2011

The figure shows a downward trajectory in the forest area as percentage of land area. However, the year-to-year change is on average 0.5%. A certain amount of forest depletion is expected, given the fact that in the period covered in the above figure (1990-2011), forest rents contributed an average of 3.4% to GDP (calculated using data from World Bank World Development Indicators). I argue that without the entry barriers and the elaborate rules and regulations, the rate of depletion would be faster. The state's entry barrier serves as a check against the possible over-exploitation of the resource. Related to this point is that local traditional authorities are likely to have different bargaining capacities, which could make them vulnerable to negotiating bad deals with timber companies if the state were not in control in the sector at the point of ownership. Again, for the protection of the resource as well as the local traditional authorities, it is advantageous that the state chooses to be in control.

On the other hand, the retention of rights to the resources places the burden of protection of the resource primarily on the state, so the state should have the means to protect the resource effectively. In conversations with a number of private actors in the timber sector during my field visits, the state's capacity to effectively protect timber was questioned. In one conversation, a stakeholder in the sector wondered whether it was better to allow private actors to take the responsibility for forest management. There is no single accurate way of making judgments about the state's capacity to protect these resources via regulation. Over the last several years, several measures have been developed to help gauge how well the state undertakes certain functions. These measures are imperfect and their utility has been questioned, but a look at some commonly used

ones (the International Country Risk Guide, which has been measuring these indicators since 1984; the World Governance Indicators, which has been measuring since 1996; and the Mo Ibrahim Index of African Governance, which has measured certain indicators since 2000) suggests challenges for Ghana when scores on indicators such as government effectiveness, bureaucratic quality or regulatory quality are examined. I had the chance to speak with a forest patrol during the first phase of my fieldwork. We spoke about the challenges facing the sector and it emerged during the conversation that lack of adequate resources hampers the state's ability to fully protect timber. So on the one hand, the entry barriers the state puts in place offers protection for the resource. On the other hand, they create a burden on the state to provide protection for the resource, and in a place like Ghana, where the state has capacity challenges, the resource may not get the full protection it needs.

The Creation of Perverse Incentives. State policy choices can create perverse incentives because entry barriers, as important as they are, have the result of crowding out users who may rightly or wrongly want access to the resource as well. In the timber sector, a major problem confronting the state is the practice of illegal chainsaw logging. This occurs when individuals unlawfully enter a forest reserve area, or even sometimes timber concessions awarded to private timber companies, and use chainsaws to illegally fell trees. They tend to supply these to the local timber market. The often-cited reason is that there is a shortage of timber supplied to the domestic market because most companies are interested in exporting to the international market. These illegal chain saw operators fill this supply gap by selling their illegally acquired timber products to the

local timber market. This illegal activity calls the state into action because it threatens not only the resource itself but also the maximum rent the state can derive from the resource. To a large extent, state institutions are very active in trying to mediate this problem. The table below highlights a select number of news stories that demonstrate this point.

Table 55: Examples of State Institutions in Action—The Timber Sector

Story	Source	Link and date accessed
The jailing of seven chainsaw operators who had been arrested for illegal timber lumbering activities in the Western Region	Ghana News Agency 11-11-2010	http://ghananewsagency.org/human-interest/court-jails-seven-chainsaw-operators-for-illegal-timber-lumbering-22411 February 15, 2013.
Arrest of chainsaw operator for felling trees in a forest reserve.	Ghana News Agency 06-27-2012	http://www.ghananewsagency.org/science/chainsaw-operators-arrested-for-felling-trees-in-forest-reserve-45526 February 15, 2013.
Design of a system to register wood dealers with sawmills to block sales outlets for illegal chainsaw operators	Illegal Logging Info 09-13-2008	http://www.illegal-logging.info/item_single.php?it_id=2862&it=news February 15, 2013.
Six months sentence for a convicted illegal chain saw operator	Ghanaweb News Archive 02-19-2009	http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=157929 February 15 2003.
Establishment of a Rapid Response Unit by the Ghana Forestry Commission to speed up the process of responding to alerts of illegal chainsaw activity	The Ghanaian Times 02-28-2012	http://newtimes.com.gh/story/forestry-commission-ready-for-illegal-chain-saw-operators February 15, 2013.
The setting up of a Prosecution Unit within the Ghana Forestry Commission to prosecute illegal chain saw operators	Mingle's Base blog spot 09-04-2011	http://edmingle.blogspot.com/2011/09/forestry-commission-steps-up-fight.html February 16, 2013.

The Extraction of Rents at the Point of Production. Although the point of sale is where the majority of the rent is extracted from the resource sector, the state extracts some rents from the timber sector at the point of production. In the previous section addressing state actions at the point of production, I pointed to the collection of a rent

called stumpage fees. This is based on the volume and species of wood harvested, with the proceeds being shared between the Forestry Commission, Office of Administrator of Stool Lands, The Stool, District Assemblies and Traditional Council. The key to collection lies primarily in being able to verify the volume harvested by the timber companies in order to make a determination of the amount to levy in stumpage fees. The state does this by assigning to concessions forest officers who make this determination before the logs are transported to the sawmill. The first burden placed on the state is having enough forest officers who cannot be compromised by timber companies. The next key issue is the collection of the fees once they have been levied, especially because the benefits are shared with local communities. A look at the stumpage fees report show challenges with collection. The January 1-June 30th 2010 report shows an unpaid balance of $2,850,302. From the report dated January 1 to June 30th 2011, the report shows unpaid balance of $2,147,730.77 (dollar equivalent is calculated using foreign exchange rate data from the World Bank). Policy choices thus create burdens for the state and additional burdens for communities who have shared benefits in the rents collected at the point of production. So is collecting rents at the point of production the most ideal way to operate in the timber sector?

States and Resources. The state has the potential to waste resources via its policy choices. Looking back at the experience in the 1970s ,when a policy of nationalization drove the state to take control of private timber companies and resulted in the subsequent decline in the timber sector, shows how waste can be the result of state policies. As the section in this chapter on the point of production showed, it took a reversal of policy

actions and the privatization approach to the failing timber companies to get the sector back on track. Related is also the case that the proper use of resources cannot discount the capacity of the state to deliver based on its policy choices. When the policy of nationalization appeared to prove unworkable, the state changed course, albeit with some assistance and pressure from the international donor community. Nonetheless, the state cannot ignore its capacity when deciding on particular choices where it resources are concerned.

Avenues for Corruption. The state's potential to engage in corrupt practices emerges in its policy choices in the timber sector. The state decides who gets harvesting rights. In a society where corruption is a challenge, companies with personal ties to state actors will stand to benefit at the expense of those without any personal ties or connections. The mechanism used for extracting rents from the timber sector may also presents opportunities for corruption. I learned in my interviews that timber companies, can, in extenuating circumstances, request waivers to sell below the minimum guiding selling price. Again, the danger here is that in the same environment where corruption is a challenge, creating situations where state officials must exercise discretion can be problematic. I can envision the granting of exceptions to timber companies becoming a corrupt situation in which timber companies, eager to sell, will attempt to bribe state officials. This is not to cast aspersion on officials of the timber sector but to highlight the real possibilities that come with the policy choices the state makes in a certain context.

Implications of State Policy Choices In The Gold Mining Sector. To recap, the state's policy choices in the gold mining sector are as follows: retention of rights to the

resources at the point of ownership; no organization of a state enterprise to undertake gold mining, since the state instead chooses to use private gold-mining companies at the point of production; and the use of a non-price-fixing mechanism to extract rents from the sector at the point of sale. How do these policy choices shape what occurs in the gold sector? In this section, I examine a few implications of the policy choices of the state in the gold mining sector. Because gold is a natural resource, as is timber, some of the implications bear similarities to the implications for the timber sector.

The Use of Natural Resources. The figure below is a map of Ghana, showing the regional distribution of the three resources of concern to this study. The map with the yellow dots shows the regional concentration of gold deposits. The map shows the highly concentrated and place-specific nature of gold deposits. The population of the gold mining towns in total does not account for more than 5% of the total population of the country.

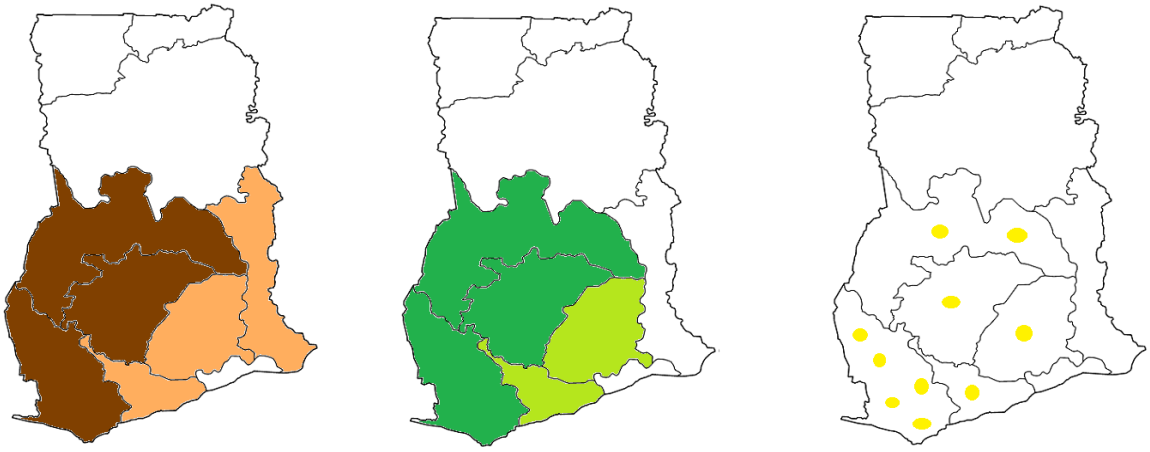


Figure 7: Regional Distribution of Resources

The map with the yellow dots in the figure above shows that if the rights to gold are localized there is the possibility that 90% of the population will be excluded from sharing in the benefits of a natural resource. The exclusion will be the result of the accidents of history, in which they happen to inhabit a part of the country without that resource. The state's approach to the sector, both in retaining the rights to the resource as well as the various methods of rent extraction, ensures that, in principle, no part of the population is excluded from the share of the resource.

The Importance of Entry Barriers. Because the state retains ownership rights to gold, it creates a set of entry barriers where seeking rights to the resource involves a very elaborate process and demands compliance with several rules and regulations. In principle, an entry barrier allows for the responsible management and use of the resource. I argue that entry barriers serve as a check against the possible over-exploitation of the resource.

On the other hand, the retention of rights to the resources places the burden of protection of the resource primarily on the state. This means that the state should have the resources to protect the resource effectively, which raises questions of effective regulatory oversight for the state in the gold mining sector, as it does in the timber sector. As discussed in the timber sector, scores on key governance measures, imperfect though they may be, such as government effectiveness, bureaucratic quality or regulatory quality suggest challenges for Ghana. So on the one hand, the entry barriers the state puts in place offers protection for the resource. On the other hand they create a burden on the

state to provide protection for the resource, and in a place like Ghana, where the state has capacity challenges, the resource may not get the full protection it needs.

The Creation of Perverse Incentives. State policy choices can sometimes create perverse incentives. Entry barriers are important but they sometimes result in crowding out users who may rightly or wrongly want access to the resource as well. In the gold sector, a major problem confronting the state is the practice of illegal mining popularly called *galamsey*. This occurs when individuals unlawfully enter gold-producing areas and use nontraditional methods to search for gold. Any gold they find is usually sold to the local market. The oft-cited reason for this very risky mining practice is the economic returns. This illegal activity calls the state into action because it threatens not only the resource itself but also the maximum rent the state can derive from the resource. Additionally, there are serious environmental implications arising from the practice. To a large extent, state institutions are very active in trying to mediate this problem. The table below highlights a select number of news stories that demonstrate this point.

Table 57: Examples of State Institutions in Action—The Gold Mining Sector

Story	Source	Link and Date of Access
Arrest of 4 Illegal Chinese Miners who had engaged in a gun battle with local residents in an area where they were illegally mining for gold	Ghana Nation 07-20-2012	http://news1.ghananation.com/latest-news/266725-police-arrest-4-illegal-chinese-miners-in-gun-battle-over-gold.html February 15 2013.
Registration of legal small scale operators in a district in the Northern to properly regulate them and prevent illegal mining activities	All Africa 02-13-2013	http://allafrica.com/stories/201302130791.html February 15 2013.
Court ordered closure of illegal mining pits identified in a district in the Ashanti Region.	Myjoyonline News 02-04-2013	http://edition.myjoyonline.com/pages/news/201302/100873.php February 15 2013.
Arrest of 24 illegal Chinese miners by the Ghana Immigration Services for illegal mining on a concession belonging to Forces Field Mining Ltd.	Ghanaweb News Archive 11-14-2011	http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=223528 February 15 2013.
Arrest of ten illegal gold miners by Central Region Police Command for illegal mining activities on concession belonging Perseus Mining Ghana Limited.	Myjoyonline News 09-13-2012	http://edition.myjoyonline.com/pages/news/201209/93900.php February 15 2013.

The Extraction of Rents at the Point of Production. A key rent extracted from the sector—the mineral royalty—is production-based, since it is collected based on the value of the total minerals mined. The key to collection lies primarily in being able to verify not just how much gold has been "won" but also the value of that gold. The state does this by assigning to gold-mining companies a state official who has the responsibility of verifying the amount gold produced and its value. The first burden placed on the state is having state officials trained to understand gold mining operations perform this

verification. This is a challenge for the state and drove the state to raise the idea of gold audits in its budget and policy statements for the 2004 fiscal year. The purpose of the gold audit program was to effectively check declarations made by gold-mining companies on their production and exports, and in turn enable the state collect the correct amount of royalties. While the initiative did not materialize, the state re-introduced the idea in the 2009 fiscal year budget. While the program again did not proceed, it is quite obvious that getting an accurate sense of production for rent extraction is challenging.

States Use of Resources. The state has the potential to waste resources with its policy choices. Looking back to when the gold mining sector was nationalized, with the setting up of the state gold mining corporation and the subsequent decline in the sector, one realizes the state's potential for wasting natural resources. As the section in this chapter on the point of production shows, it took a reversal of policy actions and the privatization approach to the declining gold sector to get the sector generally back on track. Related is the case that the proper uses of resources cannot discount the capacity of the state to successfully implement its policy choices. When the policy of nationalization appeared to prove unworkable, the state changed course (albeit with some assistance and pressure from the international donor community). Nonetheless, the state cannot ignore its capacity when deciding on particular choices where resources are concerned.

What if There Were No State?

Bates (1981), this study argues, would not object to the idea of a diminished state. As Bates put it:

> Government intervention…creates opportunities for conferring privileged access to commodities that have been rendered scarce in comparison to the demand for them. Privileged access is used by the elites…for direct personal gain or to create a political following (1981, 102).

Given what has been discussed with regards to cocoa, timber, and gold, the implications of the policy choices for the state and cocoa farmers, timber workers and gold mine workers, it is tempting to ask what if there were no state? In this section, I discuss a number of questions that must be answered, given a number of policy recommendations that are often proposed. I begin with the cocoa sector, proceed to the timber sector, and then conclude with the gold mining sector.

The Case of the Cocoa Sector. There are two major issues the state must address with regards to the cocoa farmer: the use of producer price fixing to extract rent from the farmers and the basic living conditions of cocoa farmers. The use of producer price fixing continues to be a major challenge for the state. During my field work I proposed a hypothetical question to two well-informed persons associated with the cocoa sector as to whether the state will ever give up its strong control over the cocoa sector at the point of sale; they quickly answered no. This means that if the state is to loosen its grip, it must be offered real incentives to do so. One proposed way that has been suggested as a plausible way to deal with the producer price fixing issue is to allow a rival organization to the Ghana Cocoa Board, such as a farmer's cooperative, that is allowed to buy and export cocoa directly to the world market.

The problem with this alternative path is ensuring that the rival organization does not end up taking on the character of the Ghana Board. How so? The competitor will have to devise its own pricing mechanism, ensure that it has the infrastructure to haul cocoa to the ports, undertake stringent quality control, and make investments at the point of production, just like the Ghana Cocoa Board. The competitor, therefore, will have to factor in the cost of its operations and devise a pricing mechanism that maintains a margin to cover the cost of operation. The argument is that a farmers' cooperative would have the incentive to keep its cost of operation to a minimum because of the price incentive. The other issue to consider in advocating for a competitor to the state is creating the right incentive structure that would make the state willing to give up its stronghold on the cocoa sector. A critical component of that incentive structure is how the state would recover the loss of revenue it is likely to experience if it opened itself to competition. One way the state can deal with the possible loss of rents is the new revenue pouring into the state for oil exports, which could potentially offset some of the revenue loss.

The issue tied to pricing and the control of the state at the point of sale is the quality of the cocoa beans. The key concern of the state is that competition at the point of sale will comprise the quality of the cocoa beans, which is a strong selling advantage of the state. Ghana's cocoa receives a premium because of its quality. The state puts in very stringent quality control measures where Ghana's cocoa is concerned. Another way the state can deal with the pricing issue and check quality at the same time is to consider using the price guide system used in the timber sector. The state uses licensed buying

companies to purchase cocoa from the farmers. The state has also agreed that if these licensed buying companies could demonstrate capacity the state would allow them to export directly to the world market. The state could move towards a full embrace of the allowing exports by these licensed buying companies beyond the 30% agreed to in policy at the moment. The state can reserve the right to ensure that the price at which cocoa is exported is in compliance with the price guide. In that case the state would still retain the ability to extract rents from cocoa. At the same time, the state will maintain its regulatory oversight over cocoa to ensure that quality is not compromised. Even if the licensed buying companies do not end up as competitors to the state, whatever form of organization emerges as the rival can be subjected to the guiding price mechanism. Also, the state does not lose the export tax that is extracted from the cocoa sector as well. Plus these licensed buying companies of farmers' cooperatives will pay corporate taxes as well.

The other major concern over cocoa farmers is the consequence that rent extraction has on their everyday lives. The concern over cocoa farmers stems mainly from the conditions in which they live in their various cocoa-producing villages and towns. As this study has shown, basic amenities such as water, electricity, and modern toilet facilities are missing in cocoa-producing areas. And given how much the state earns in foreign exchange on the backs of these cocoa farmers, it is impossible to argue that cocoa farmers should live in deprivation. To the credit of the state, there are various schemes in place to provide social support for cocoa farmers, such as the pension scheme, the housing scheme, and the scholarship fund to support secondary education. The state

must continue and at some point increase the extent of social provision, particularly basic amenities, in cocoa-growing areas. It is important that initiatives such as the housing scheme are designed to have widespread impact so that they actually improve the living conditions of cocoa farmers. The COCOBOD Scholarship Fund is an important investment that the state makes in helping to educate the children of cocoa farmers. The state must, however, ensure that these scholarships are awarded to the children of cocoa farmers. In addition, the scholarship scheme must be expanded to assist with post-secondary and tertiary education.

The Case of the Timber Sector. In the timber sector, the key policy issue that emerges for me revolves around the implications of state ownership of the rights to timber for the fiscal regime imposed to extract other forms of revenue from the timber sector. The table is the fiscal regime that governs the timber sector.

Table 58: Fiscal Regime of Timber Sector

Fee/tax	Basis	Collection	Beneficiaries
Concession rent	Annual fee charged per hectare of concession area	Forestry Commission	Office of Administrator of Stool Lands, District Assemblies Stools Traditional Councils
Stumpage fee	Species-specific volume fee charged after felling	Forestry Commission	Forestry Commission Office of Administrator of Stool Lands District Assemblies Stools` Traditional Councils
Timber rights fee	Annual lump-sum fee for the entire concession area	Forestry Commission	Distribution unsolved
2% and 1% export levy	Levy charged on declared FOB value of export consignment	Forestry Commission	Forestry Commission
Air dried lumber levy	Fee charged on all export consignments of air-dried lumber. Applies to 9 species	Forestry Commission	Plantation Development Fund administered by Forestry Commission
Corporate Tax	Tax charged on company turn over after deduction of all outgoings and expenses incurred in the production of income	Ministry of Finance and Economic Planning	Government of Ghana Consolidated Fund

Source: Hansen and Lund (2011).

The state chooses to retain ownership to timber. The rights are held in trust for the stools who own the land on which timber is found. As a result of this policy choice, the

state extracts a particular type of revenue from timber companies called stumpage fees, a portion of which goes to the stool lands. The method by which the state assesses and collects the stumpage fee needs modification if the beneficiaries of this trust relationship are to realize any direct payments for a natural resource being on their lands. The stumpage fee is based on the total volume of trees felled rather than their total value. This means that the state under-charges somewhat for its timber resources. The main beneficiaries of the stumpage fees are the local communities and the current method ultimately shortchanges these communities. Besides, the stumpage fees are constantly in arrears. I took a look at available stumpage reports from the Ghana Forestry Commission's website. In the period January 1- June 30, 2011, timber contractors and companies owed a total of about $1.8 million, for July 1- December 31, a total of $2.04 million, and for January 1- June 30th, a total of $2.26 million. The timber companies, it is alleged, under-declare the total volume of trees felled, because normally the forestry officer assigned to the concession from where the trees are felled is not pressed to make the assessment. Secondly, the timber companies find alternative routes from their concessions to their sawmills, thereby avoiding forestry commission checkpoints, according to an informant. This demonstrates inefficiency both in the manner in which the fee is levied as well as the manner in which it is collected. I think that the current point of collection for stumpage fees should be abolished. Instead of collecting stumpage fees at the point where the trees are felled, the state needs to collect the stumpage fees at the point where the timber company is ready to export. The hesitation here on the part of the state might be the delay in collecting stumpage fees and disbursement to the local

beneficiaries. However, the fees are always in arrears so it does not much change when local authorities receive their share of the stumpage fees. The benefit of changing the collection point is that the state gets an accurate picture of not only the volume of exports but the value of the exports, as well. Whatever the collected stumpage fees amount to, the state has the option of charging it separately or as part of the export tax levied.

The state charges timber companies an annual timber rights fee and a concession rent fee. The timber rights fee is based on the entire concession area. The concession rent is based on how many hectares the concession area covers. This is double taxation. The state can lump the fees together and assesses the appropriate amount that must be levied on timber companies for granting them the rights to harvest timber in a given concession area. The more streamlined the state can make the various types of revenue it extracts from timber companies, the more efficient the collection of that revenue will be.

Lastly, the state levies a 30% corporate tax rate on company turn-over. Timber companies who are granted free zone status are exempted from the corporate tax for ten years and pay a reduced rate of 8% thereafter (Hansen and Lund 2011, 632).The objectives of the Ghana Free Zones Board are noble and two in particular seem relevant to timber companies—creating employment and providing opportunities for joint business ventures between foreign and local investors. It is therefore understandable why the board would offer the kind of incentives it offers. More importantly, if these incentives translate into better working conditions for workers in timber then the study fully embraces that. However, I am of the opinion that after a ten-year tax holiday an 8% corporate tax rate is too low and strongly believe that an upward adjustments of the rate

past 8% will be appropriate after timber companies have benefited from a ten-year tax holiday.

The Case of the Gold Mining Sector. In the gold mining sector, the use of non-price-fixing mechanisms means that the state has to be in a position where it can extract the rents using other means. I do not see any more fiscal touch points from which the state can extract additional revenue from the gold mining sector. However, I think the state can strengthen its revenue collection from the sector. For example, in analyzing the budget statements obtained from the study, the state's intention of proceeding with gold audits, and the basis for that intention, appears to be that the state is uncertain whether it is extracting enough revenue from the gold mining sector based on the declared levels of production. It will be good if the state can proceed with implementing these audits. However, the state must exercise caution so as not to create a disincentive that drives away essential investments in mining.

Study Limitations

The research context for pursuing the central question of the dissertation is Ghana. This means that findings of the dissertation explain the policy choices in cocoa, timber and gold as pursued by the Ghanaian state. However, Ghana is not the only country endowed with these resources. What motivates the state in Ghana for example to exert greater control in the cocoa sector at the point of sale and thus use producer price fixing, may not be the same reason why in a neighboring country like Cameroon, the state does not use producer price fixing. As mentioned in Chapter 1, Ghana remains the only country that continues to use producer price fixing to extract rents from the cocoa

sector. Are the imperatives different for other countries than they are for Ghana? The study is limited in its ability to make such a determination. The same logic applies to the other two sectors in the study—timber and gold. The study is unable to assert whether the same drivers of state policy choices are the same drivers in our states that export timber and cocoa. The findings therefore require further testing to ascertain the extent to which the Ghanaian context mirrors or does not mirror other contexts.

In examining the consequences of state policy choices on the material well-being of cocoa farmers, timber and gold mine workers, I rely on six towns in one region to illustrate the point. However, the activities in these resource sectors, especially in cocoa and timber, are more widespread and go beyond the confines of the specific towns examined. This makes it difficult to assert the extent of poverty that exists among these workers beyond the confines of these six towns. The experiences of timber workers in Takoradi and Sambreboi may not necessarily be the experiences of timber workers in Mim, Brong Ahafo region. In order to assert fully the consequences of state policy choices on these workers, it will be important to expand to other towns in other regions where the resources are also found. Further testing may possibly reveal regional variations within the Ghanaian context. Beyond the Ghanaian context, it will also be very important to see how the different policy choices in the same sectors across different contexts impact these workers differently. By that I mean are Cameroon cocoa farmers better off than Ghanaian cocoa farmers because the state in these two countries use very different mechanisms for rent extraction at the point of sale in their respective cocoa

sectors? These are questions the dissertation cannot answer at this moment without further testing of the results.

In relation to the above point, I relied on survey data in trying to examine how state policy choices affect the material well-being of workers in these resource sectors. The dissertation could have benefited from interviews with these workers to throw further light on their living conditions. I plan to revamp the survey and expand the regions covered in the follow-up to get a more comprehensive view of the living conditions of these workers. Additionally, a follow-up study will include more in-depth interviews with the workers in the three sectors as well.

The role of politics in state decisions in each of the three sectors is to an extent under-examined in this dissertation. As previously acknowledged, there are political influences in state decision-making. However, in this dissertation, I focus more on other motivations of the state and question the elevation given to politics by previous studies. In the next phase of this research work, I will attempt to explore in greater detail how the political context in each of the sectors also impacts state behavior.

The primary focus of my dissertation is trying to understand the motivations for state policy choices and their impact both for the state and three primary groups (cocoa farmers, timber workers, and gold mine workers). However, policy choices also produce a pattern of interaction—how the key actors relate to one another, the strategies they adopt in response to the level of control chosen by the state, and the consequences of such patterns of interaction. This line of inquiry is an aspect of this research for future work.

When all is said and done, there is no denying that resource endowments matter, but they only matter if the policy choices that shape their development create the right set of incentives for all the actors involved in the sector. Most importantly, the choices the state makes have real consequences for poverty and basic living conditions for those whose livelihoods depend on work in the sector. Policy choices matter, but so does the welfare of cocoa farmers, timber company workers, and gold mine workers.

APPENDIX A: Examples of State Development Plans, Ghana.

Plan Name	Plan Period	Examples of Areas Addressed by the Plan
The 7-Year Development Plan	1963/64 – 1969/70	Industrial development, Infrastructure development, provision of social services and amenities
The 2-Year Development Plan	1968/9 – 1969/70	Economic growth, Reduction in the level of unemployment, equitable distribution of national income
The 1-year Development Plan	July 1970 – June 1971	Economic growth
The 5-Year Development Plan	1975/6 – 1979/1980	Economic growth, Full employment, Equitable income distribution,
The Economic Recovery Program	1983-1989	Exchange rate stability, Economic growth
The First Medium Term Development Plan	1997-2000	Human development, Economic growth, Rural Development
The Ghana Poverty Reduction Program (GPRS I)	2003-2005	Macroeconomic stability, Production and gainful employment, Special Programs for the Vulnerable
The Growth and Poverty Reduction Strategy (GPRS II)	2006-2009	Macroeconomic stability, Accelerated private sector-led growth
The Coordinated Program Of Economic And Social Development Policies	2010-2016	Economic development, Science, Technology and Innovation (STI) Infrastructural Development, Natural Resource Management and

APPENDIX B: World Governance Indicators Scores for Ghana

Indicator: Government Effectiveness, 1996-2012.

Year	Score	Percentile
1996	-0.11	53.0
1998	-0.14	50.0
2000	0.02	58.0
2002	-0.13	52.0
2003	-0.19	52.0
2004	-0.16	52.0
2005	-0.16	51.0
2006	0.11	59.0
2007	0.08	55.0
2008	0.02	56.0
2009	-0.04	54.0
2010	-0.04	54.0
2011	-0.05	54.0
2012	-0.07	52.0

Source: World Governance Indicators, 1996-2012.

Indicator: Control of Corruption, 1996-2012.

Year	Score	Percentile Rank
1996	-0.22	49.0
1998	-0.17	54.0
2000	-0.07	58.0
2002	-0.29	47.0
2003	-0.24	49.0
2004	-0.22	50.0
2005	-0.36	46.0
2006	-0.02	58.0
2007	0.05	59.0
2008	-0.04	57.0
2009	0.03	60.0
2010	0.06	61.0
2011	0.05	59.0
2012	-0.09	56.0

Source: World Governance Indicators, 1996-2012.

Notes.
Scores range from -2.5 to 2.5. Higher scores reflect better performance on the indicator. Percentile rank ranges from 0-100. 0 represents lowest rank and 100 represents highest rank.

APPENDIX C: Ghana's Performance on Selected Development Indicators

Indicator	Performance	Years of Data Available
1. Progression to secondary school	91%	16
2. Improved sanitation facilities (% of population with access)	10.2%	21
3. Improved water source (% of population with access)	70.2	21
4. Primary school complete rate	64.5%	25
5. Infant mortality rate	87 per 1,000	52
6. Life expectancy	54.6	52

APPENDIX D: COCOA SECTOR SURVEY

Department of Public and International Affairs

4400 University Drive, MS 3F4, Fairfax, Virginia 22030
Phone: 703-993-1400; Fax: 703-993-1399

I am John Osae-Kwapong, a doctoral candidate in political science at George Mason University, Fairfax, Virginia in the United States. I am completing my dissertation research on the topic of the political economy of resource management in Ghana. In particular I am examining the reasons, if any for the key policy differences, in the cocoa, timber and gold mining sectors. As a well informed person, I am interest in your views on the COCOA SECTOR.

I anticipate that it will take you no more than 10 minutes to complete this survey.

This research has been reviewed according to George Mason University procedures governing your participation in this research. Therefore

a. Your responses are solely for academic research purposes
b. There are no foreseeable risks participating in this survey.
c. The responses you provide to this survey are anonymous and will be treated confidentially.
d. The survey is not asking for any personal identifiers
e. The responses you provide cannot be traced to you.
f. Only the researcher will have access to the data.
g. All data will be reported in aggregate form.
h. Your participation is voluntary.

Contact Information

I may be reached via email at josaekwa@masonlive.gmu.edu for questions or to report any research-related problem concerning this survey.

You may contact the George Mason University Office of Research Subject Protections at irb@gmu.edu; 4400 University Dr. MS 6D5, Fairfax VA 22030, 001-703-993-4121 if you have questions or comments regarding your rights as a participant in the research.

Thank you for your assistance with my project.

1. Do you agree to participate in this survey?

a. Yes b. No

2) Please rate your level of agreement or disagreement with each of the following statements below.

	Strongly Agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly Disagree**
The state is dependent on the cocoa sector for development.					
Cocoa is a major contributor to the economy of Ghana (GDP, employment, revenue, etc.).					
The state invests a lot of resources(financial/non financial) in the cocoa sector.					
The state will be able to rely on cocoa for the long term development needs of Ghana.					
The cocoa sector has stakeholders who are able to successfully influence government policy on cocoa.					
The international donor community (World Bank, IMF, etc) have a great influence on the policies adopted in the cocoa sector compared to cocoa farmers.					
The state has the capacity to engage in the key activities in the cocoa sector(e.g. growing cocoa)compared to cocoa farmers.					
The state has the capacity to engage in the key activities in the cocoa sector(e.g. marketing and export)compared to cocoa farmers.					

Thank you very much for your assistance with my project.

APPENDIX E: GOLD MINING SECTOR SURVEY

Department of Public and International Affairs

4400 University Drive, MS 3F4, Fairfax, Virginia 22030
Phone: 703-993-1400; Fax: 703-993-1399

I am John Osae-Kwapong, a doctoral candidate in political science at George Mason University, Fairfax, Virginia in the United States. I am completing my dissertation research on the topic of the political economy of resource management in Ghana. In particular I am examining the reasons, if any for the key policy differences, in the cocoa, timber and gold mining sectors. As a well informed person, I am interest in your views on the GOLD MINING SECTOR.

I anticipate that it will take you no more than 10 minutes to complete this survey.

This research has been reviewed according to George Mason University procedures governing your participation in this research. Therefore

i. Your responses are solely for academic research purposes
j. There are no foreseeable risks participating in this survey.
k. The responses you provide to this survey are anonymous and will be treated confidentially.
l. The survey is not asking for any personal identifiers
m. The responses you provide cannot be traced to you.
n. Only the researcher will have access to the data.
o. All data will be reported in aggregate form.
p. Your participation is voluntary.

Contact Information

I may be reached via email at josaekwa@masonlive.gmu.edu for questions or to report any research-related problem concerning this survey.

You may contact the George Mason University Office of Research Subject Protections at irb@gmu.edu; 4400 University Dr. MS 6D5, Fairfax VA 22030, 001-703-993-4121 if you have questions or comments regarding your rights as a participant in the research.

Thank you for your assistance with my project.

2. Do you agree to participate in this survey?

a. Yes b. No

2) Please rate your level of agreement or disagreement on each of the following statements regarding the GOLD MINING SECTOR in GHANA.

	Strongly Agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly Disagree**
The state is very dependent on the gold mining sector for development.					
The gold mining sector is a major contributor to the economy of the country.(e.g. GDP, employment, revenue).					
The state invests a lot of resources(financial/non financial) in the gold mining sector.					
The state will be able to rely on the gold mining sector for the long term development needs of Ghana.					
The gold mining sector has stakeholders who are able to successfully influence government policy on gold mining.					
The international donor community(World Bank, IMF, etc) has a great influence on the policies adopted in the gold mining sector					
The state has the capacity to engage in the key activities in this resource sector(mining gold)					
The state has the capacity to engage in the key activities in this resource sector(marketing and exporting gold)					

APPENDIX F: TIMBER SECTOR SURVEY

Department of Public and International Affairs

4400 University Drive, MS 3F4, Fairfax, Virginia 22030
Phone: 703-993-1400; Fax: 703-993-1399

I am John Osae-Kwapong, a doctoral candidate in political science at George Mason University, Fairfax, Virginia in the United States. I am completing my dissertation research on the topic of the political economy of resource management in Ghana. In particular I am examining the reasons, if any for the key policy differences, in the cocoa, timber and gold mining sectors. As a well informed person, I am interest in your views on the TIMBER SECTOR.

I anticipate that it will take you no more than 10 minutes to complete this survey.

This research has been reviewed according to George Mason University procedures governing your participation in this research. Therefore

q. Your responses are solely for academic research purposes
r. There are no foreseeable risks participating in this survey.
s. The responses you provide to this survey are anonymous and will be treated confidentially.
t. The survey is not asking for any personal identifiers
u. The responses you provide cannot be traced to you.
v. Only the researcher will have access to the data.
w. All data will be reported in aggregate form.
x. Your participation is voluntary.

Contact Information

I may be reached via email at josaekwa@masonlive.gmu.edu for questions or to report any research-related problem concerning this survey.

You may contact the George Mason University Office of Research Subject Protections at irb@gmu.edu; 4400 University Dr. MS 6D5, Fairfax VA 22030, 001-703-993-4121 if you have questions or comments regarding your rights as a participant in the research.

Thank you for your assistance with my project.

1. Do you agree to participate in this survey?

a. Yes b. No

2) Please rate your level of agreement or disagreement with each of the following statements below.

	Strongly Agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly Disagree**
The state is very dependent on the timber sector for development.					
Timber is a major contributor to the economy of Ghana(e.g. GDP, employment, revenue).					
The state invests a lot of resources(financial/non financial) in the timber sector.					
The state will be able to rely on timber for the long term development needs of Ghana.					
The timber sector has stakeholders who are able to successfully influence government policy on timber.					
The international donor community (World Bank, IMF, etc) has a great influence on the policies adopted by the state in the timber sector.					
The state has the capacity to engage in the key activities in the timber sector(harvesting timber).					
The state has the capacity to engage in the key activities in the timber sector(marketing and export).					

Thank you very much for your assistance with my project.

APPENDIX G: QUALITY OF LIFE SURVEY QUESTIONS ADMINISTERED TO COCOA FARMERS, TIMBER WORKERS AND MINERS

CONSENT STATEMENT

CS1. Are you willing to participate in this study?

No [0] *[If respondent says No, stop the interview]*

Yes [1] *[If respondent says Yes, proceed with the interview]*

INSTRUCTION FOR COMPLETING QUESTIONNAIRE

Interviewer, accurately fill the answers provided by the respondent in the response column .This task is solely the responsibility of the interviewer.

RESPONDENT SECTOR IDENTIFICATION

Occupation			
	No	Yes	Don't know
Cocoa Farmer	0	1	9
Timber worker	0	1	9
Gold Mine worker	0	1	9

Length of time in your occupation	
Less than a year	1
1-5 years	2
6-10 years	3
11-15years	4
16-20years	5
More than 20years	6
Less than a year	7

SOCIO-DEMOGRAPHICS

Let's begin by recording a few facts about yourself	
Respondent's Gender	
Male	1
Female	2

Age of Respondent *[Interviewer: Enter three digit numbers. Don't Know = 999] [Interviewer: If respondent is aged less than 18, stop interview and use cards to randomly draw another respondent in the same household]*			

Education	
No formal schooling	0
Informal schooling only	2

Some primary schooling	3
Primary school completed	4
Some secondary school/high school	5
Secondary school completed/high school	6
Post-secondary qualifications, not university	7
Some / completed University	8
Some/ completed post-graduate	9
Don't know	99

Marital status	
Single	1
Cohabitation	2
Widowed	3
Separated	4
Married	5
Other (specify)	99

What is your religion, if any?	
None	0
Christian groups / denominations	1
Muslim groups / denominations	2
Traditional / ethnic religion	3
Atheist (Do not believe in a God)	4
Don't know	9

Are you the head of your household?	No	Yes	Don't Know
	0	1	9

Do you have children?	
0	0
1-5	1
6-10	2
More than 10	3
Don't Know	9

What is your household's monthly income?	
None	0
Less than GHC100.00	1
GHC101.00 – GHC200.00	2
GHC201.00 – GHC300.00	3
GHC301.00 – GHC400.00	4
GHC401.00 – GHC500.00	5
Above GHC500.00	6
Don't know	9

Which of these things do you personally own?	No (Don't own)	Yes (Do Own)	Don't know
Radio	0	1	9
Television	0	1	9
Bicycle	0	1	9

Motorcycle	0	1	9
Motor Vehicle or Car	0	1	9

QUALITY OF LIFE QUESTIONS

What is the main source of drinking water for your household?	
Rain water	1
River, stream, lake,	2
Unprotected well	3
Protected well	4
Pump	5
Tap water	6
Pure/sachet water	7
Bottled mineral water	8
Don't Know	9

Where is your main source of drinking water for your household located?	
None	0
Outside the compound	1
Inside the compound	2
Inside the house	3
Don't know	9
Not Applicable	99

What is the distance to the main source of drinking water (one way)?	
0-5mins	1
6-10mins	2
11-15mins	3
16-20mins	4
More than 20mins	5
Don't know	9
Not Applicable	99

What is the main source of water for bathing and washing for your household?	
Rain water	1
River, stream, lake, pond	2
Public well	3
Private well	4
Public tap/stand pipe	5
Private connection to pipeline	6
Don't' Know	9

Where is your main source of water for bathing and washing drinking for your household located?	
None	0
Outside the compound	1
Inside the compound	2
Inside the house	3
Don't know	9
Not Applicable	99

What type of toilet is used by your household?	

No toilet	0
Open pit latrine	1
Ventilated improved pit latrine	2
Flush toilet	3

Is the toilet used by the household private or public?	No	Yes	Not Applicable
Private	0	1	99
Public	0	1	99

Where is the toilet used by your household located?	
No latrine	0
Outside the compound	1
Inside the compound	2
Inside the house	3
Don't Know	9
/ Not applicable	99

What is the main source of light in your household?	
None of the above	0
Flashlights	1
Lantern	2
Generator	3
Electricity	4
Don't know	9

What fuel do you use most often for cooking?	
Coal	1
Wood	2
Gas	3
Electricity	4

Which of the following communication means do you have in your household?	
Word of mouth	1
Letter	2
Land phone	3
Mobile phone	4
Internet	5

Do you ever use a mobile phone? If so, who owns the mobile phone that you use most often? *[Read out options]*	
No, I never use a mobile phone	0
Yes, I use a mobile phone that I own	1
Yes, I use a mobile phone owned by someone else in my household	2
Yes, I use a mobile phone owned by someone outside my household	3
Don't know [Do not read]	9

How often do you normally use a mobile phone to: *[Read out options]*						
	Never	Less than one time	One or two times	Three or four times	Five or more times per	Don't know *[DNR]*

		per day	per day	per day	day	
Make or receive a call?	0	1	2	3	4	9
Send or receive a text message or SMS?	0	1	2	3	4	9
Send or receive money or pay a bill	0	1	2	3	4	9

What is the main source of news for your household?	
Relatives and friends	1
Newspapers	2
Radio	3
Television	4
Internet	5

ACCESS TO KEY FACILITIES

Facility	Exists in town or district No – 0 Yes-1	Is this facility used by your household? No - 0 Yes – 1	What form of transportation do you use to get to the facility? Walk -1 Bicycle – 2 Private car – 3 Public Bus -4	How long does it take you to get to the facility 0-5mins -1 6-10mins -2 11-15mins -3 16-20mins – 4 More than 20mins – 5
Education Needs				
Nursery school				
Primary school				
Junior High School				
Senior High School				
Technical/Vocational				
Polytechnic				
Social Needs				
Community centers				
Church				
Radio station				
TV station				
Health Needs				
Clinic(government)				
Clinic (private)				
Hospital (government)				
Hospital (private)				
Traditional healer				
Polyclinic				
Economic Needs				
Trade stores				
Fresh produce markets				
Rural bank				
Private bank				
Money lender				
Post office				

Trotro/ Metro mass Transit bus stop				
Train station				
Market Stalls (selling groceries and/or clothing)				
Security Needs				
Police station				
Fire station				
Neighborhood watch				
Governance Needs				
Court house				
Chief palace				
District Assembly Office				
Gov't Dep't/ agency office				
Political party office				

FACILITIES/INSTITUTIONS USED TO ADDRESS SOCIO-ECONOMIC AND POLITICAL NEEDS

	Excellent	**Very Good**	**Good**	**Poor**	**Very Poor**	**Not applicable**
Source of drinking water as indicated						
Source of bathing/washing water						
Toilet facilities						
Source of light						
Source of cooking fuel						
Means of communication						
Sanitation facilities						
Education Needs						
Nursery school						
Primary school						
Junior High School						
Senior High School						
Technical/Vocational						
Polytechnic						
Social Needs						
Community centers						
Church						
Radio station						
TV station						
Health Needs						
Clinic(government)						
Clinic (private)						
Hospital (government)						
Hospital (private)						
Traditional healer						
Polyclinic						

Economic Needs						
Trade stores						
Fresh produce markets						
Rural bank						
Private bank						
Money lender						
Post office						
Trotro/ Metro mass Transit bus stop						
Train station						
Market Stalls (selling groceries and/or clothing)						
Security Needs						
Police station						
Fire station						
Neighborhood watch						
Governance Needs						
Court house						
Chief palace						
District Assembly Office						
Gov't Dep't/ agency office						
Political party office						

LEVEL OF SATISFACTION WITH FACILITIES AND INSTITUTIONS

	Very Satisfied	**Satisfied**	**Neither satisfied nor dissatisfied**	**Dissatisfied**	**Very Dissatisfied**	**Not applicable**
Source of drinking water as indicated						
Source of bathing/washing water						
Toilet facilities						
Source of light						
Source of cooking fuel						
Means of communication						
Sanitation facilities						
Education Needs						
Nursery school						
Primary school						
Junior High School						
Senior High School						
Technical/Vocational						
Polytechnic						
Social Needs						
Community centers						
Church						
Radio station						
TV station						

Health Needs						
Clinic(government)						
Clinic (private)						
Hospital (government)						
Hospital (private)						
Traditional healer						
Polyclinic						
Economic Needs						
Trade stores						
Fresh produce markets						
Rural bank						
Private bank						
Money lender						
Post office						
Trotro/ Metro mass Transit bus stop						
Train station						
Market Stalls (selling groceries and/or clothing)						
Security Needs						
Police station						
Fire station						
Neighborhood watch						
Governance Needs						
Court house						
Chief palace						
District Assembly Office						
Gov't Dep't/ agency office						
Political party office						

ALL SUBSEQUENT QUESTIONS SHOULD BE ANSWERED BY THE INTERVIEWER AFTER THE INTERVIEW IS CONCLUDED

Interviewer and Interview Particulars

IP1. Interviewer Name: _____ **IP 2**. Interviewer ID: _____

IP3. Interview Date: _____ **IP 4.** Interview Start Time: _____

What was the primary language used in the interview?			
English	1	Ga/Dangbe	4
Akan	2	Dagbani	5
Ewe	3	Hausa	6

In what type of shelter does the respondent live?	
Non-traditional / formal house	1
Traditional house / hut	2
Temporary structure / shack	3
Flat in a block of flats	4
Single room in a larger dwelling structure or backyard	5
Room in a hotel, or a residential hotel	6

What was the roof of the respondent's home or shelter made of?	
Metal, tin or zinc	1
Tiles	2
Shingles	3
Thatch or grass	4
Plastic sheets	5
Asbestos	6
Multiple materials	7

Were there any other people immediately present who might be listening during the interview?	
No one	1
Spouse only	2
Children only	3
A few others	4
Small crowd	5

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