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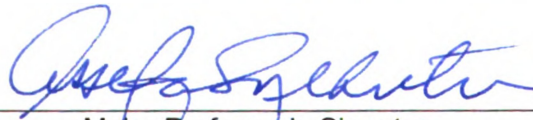
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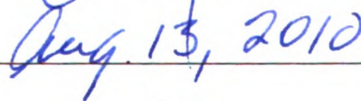
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DIAMONDS, A RESOURCE CURSE? THE CASE OF KONO DISTRICT
IN SIERRA LEONE

VOLUME I

By

Sigismond Ayodele Wilson

A Dissertation

Submitted to
Michigan State University
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ABSTRACT

DIAMONDS, A RESOURCE CURSE? THE CASE OF KONO DISTRICT IN SIERRA LEONE

By

Sigismond Ayodele Wilson

Using an actor-oriented approach to political ecology integrated with theory on the social production of scale, this dissertation examines the extent to which diamond exploitation constitutes a resource curse in Sierra Leone, with Kono District as a case-study. It uses social survey methods and remote sensing analysis of Landsat images to (1) evaluate the role of Sierra Leone's diamonds in economic development from a historical lens, (2) examine the extent to which a weak regulatory state apparatus makes a rich diamond endowment more of a curse than a blessing, (3) determine whether geographically diffuse and remotely-located diamonds are more a liability than an asset, and (4) assess whether environmental conditions are worse in diamond than in non-diamond chiefdoms.

Results of the study showed that the contribution of diamonds to national economic growth declined precipitously following the politicization of diamonds and growing informalization of mining under the leadership of Siaka Stevens. Growing disenchantment combined with grievances over access to diamond resources and rights, culminating in a civil war fuelled by conflict diamonds.

Findings indicated that actors capitalized on a weak regulatory state to fulfill their agendas. Illicit diamond exploitation was mainly driven by corruption, economic constraints and perverse economic incentives. Preferential land allocation to industrial mining following World Bank Group-directed national mining policy reforms and the

weakness of the state in ensuring companies' adherence to mining clauses precipitated corporation-community conflicts. Study findings showed that the resource curse was acute on diggers who received less than \$1 a day unlike their South American counterparts who made at least \$7 daily. Results from the study demonstrate that the spatiality of diamonds also contributed to the resource curse. Illicit diamond mining was more acute in remotely located mining sites than in extractive sites closer to towns, and spatial proximity to Guinea and Liberia facilitated diamond smuggling.

Remote sensing analysis and social surveys revealed that negative environmental impacts were more manifested in the diamond mining chiefdoms than in non-mining areas, confirming the environment as major dimensions of the resource curse. The environmental impacts of diamond mining had broader implications as the forest, land, and water were affected. Transformation of fertile lands (wetlands) to mining lands, and without required reclamation, had negative consequences on the agricultural productivity of local residents in mining areas.

Examination of power relations constituted the pros and cons of managing diamond exploitation. Policy makers should employ broad-based strategies to empower mining communities so that they can elect credible local governments. Clearly demarcated industrial and artisanal mining zones and equity and transparency in the distribution of mineral revenues could minimize potential conflicts between corporations and mining companies.

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DEDICATION

I dedicate this dissertation in memory of my Parents Akie and Eva Wilson, both of whom held a strong belief in the values of a good education, but did not live long to see the fruits of their vision.

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KEY TO ABBREVIATIONS

ADMS	Artisanal Diamond Mining Scheme
AOI	Area of Interest
APC	All People's Congress
AFRC	Armed Forces Revolutionary Council
CAST	Consolidated African Selection Trust
CCMS	Cooperative Contract Mining Scheme
CSSL	Conservation Society of Sierra Leone
CJM	Campaign for Just Mining
CMP	Core Mineral Policy
CRO	Community Relations Officer
CMS	Contract Mining Scheme
CSO	Central Selling Organization
DC	Diamond Corporation
DACDF	Diamond Area Community Development Fund
DCSL	Diamond Corporation Sierra Leone
DDI	Diamond Development Initiative
DFID	Department For International Development
DICORWARF	Diamond Corporation
DRC	Democratic Republic of Congo
ECOMOG	Economic Community Military Operation Group
EIA	Environmental Impact Assessment
EITI	Extractive Industry Transparency Initiative
FESS	Foundation for Environmental Security and Sustainability
GDO	Government Diamond Office
GDP	Gross Domestic Product
GGDO	Government Gold and Diamond Office
GOSL	Government of Sierra Leone
GPS	Global Positioning System
HRD	Hoge Raad voor Diamant (Diamond High Council)
IDMP	Integrated Diamond Management Program
IMF	International Monetary Fund
KHL	Koidu Holdings Limited
KMC	Kariba Mining Company
KPCS	Kimberly Process Certification Scheme
KPM	Kono Progressive Movement
MADA	Mining Area Development Association
MMR	Ministry of Mineral Resources
MW	Mines Warden
MYSA	Minera Yanacocha
NACE	National Advocacy Coalition of Extractives
NaCEF	National Commission for the Environment and Forestry
NDMC	National Diamond Mining Company
NGO	Non-Governmental Organization
NMJD	Network Movement for Justice and Development

NPFL	National Patriotic Front of Liberia
NPRC	National Provisional Ruling Council
NRA	National Revenue Authority
PAC	Partnership Africa Canada
PDA	Peace Diamond Alliance
PEER	Public Emergency Economic Regulations
PMMC	Precious Mineral Marketing Company
RUF	Revolutionary United Front
SLDC	Sierra Leone Diamond Company
SLPP	Sierra Leone People Party
SLST	Sierra Leone Selection Trust
SSA	Sub-Saharan Africa
TM	Thematic Mapper
UAC	United African Company
UNAMSIL	United National Mission in Sierra Leone
UNITA	Uniao Nacional pela Independencia Total de Angola
USAID	United States Agency for International Development
USGS	United States Geological Survey
WBG	World Bank Group

CHAPTER 1 INTRODUCTION

1.1 Statement of the Problem: A “Resource Curse?”

The primary purpose of this study is to examine the extent of the so called resource curse with respect to diamond exploitation in Sierra Leone using Kono District as case study. For purposes of this study diamonds as a resource curse are characterized by illicit diamond exploitation, socio-economic disparity between diggers and dealers, a proclivity for conflicts, and propensity for environmental degradation. A related objective is to investigate the extent to which the spatial spread of diamonds could have contributed to illicit extraction of the resource. Second, the study explores environmental conditions in diamondiferous and agricultural chiefdoms to ascertain to what extent diamond exploitation may have worsened conditions in diamond areas.

Natural resources continue to be the principal ingredient for economic development in developing countries in general and Sub-Saharan Africa (SSA) in particular (Bebbington et al., 2008; Rosser, 2006; Ross, 1999). Conventional wisdom suggests that an endowment of highly valuable natural resources like oil and diamonds is expected to foster development (Rosser, 2006). This is not always the case as is evident in the developing world in general and Sub-Saharan Africa in particular. Under certain conditions, there is a paradoxical negative relationship between natural resource endowment, and socio-economic conditions¹. This negative relationship between abundant natural resources and socio-economic performance is referred to as a “resource curse” (Auty, 1993,

¹ Resource dependence is a situation in which natural resources contribute significantly to a country's GDP and foreign exchange earnings.

2001; Ross, 1999)². Generally, resource endowments in developing countries do not necessarily lead to the resource curse. The resource curse is contingent upon specific endogenous political, economic, social, geographic conditions and exogenous conditions. What then are these conditions under which a valuable resource endowment becomes a resource curse?

Economically, many developing countries (especially those in SSA) that are endowed with and are economically dependent on highly valuable natural resources do have slow or negative economic growth (Sachs and Warner, 2001). Arguments for the resource curse indicate that the economies of countries with fewer natural resources grow faster than those richly endowed with natural resources (Ross, 2003; Stevens, 2003). Poor economic growth can be mainly attributed to what are known as revenue volatility, the 'Dutch disease', and rent seeking (Auty, 2004). Resource volatility refers to international price fluctuations that can have debilitating effects on resource dependent countries. The Dutch disease is an economic situation in which a revenue boom from the sale of natural resources (which include mineral resources) raises the value of a nation's currency (Stevens, 2003). The resulting effects are a decrease in price competitiveness with other nations and thus decrease in export of manufactured goods, and an increase in imports.

Rent seeking refers to efforts both legal and illegal, to acquire access to or control over opportunities for earning rents. In mineral and oil dependent countries, rent seeking can be defined as an approach used in the public and private sector, aimed at capturing

² The World Bank supports existence of this phenomenon: see Sala-I-Martin, Xavier, and Arvin Subramanian (2003)

mineral or oil money through non-productive means (Tollison, 1982). Rent seeking is greater in resource rich countries since wealth is centered in the public sector or few companies. Rent seeking can breed corruption especially in cases where only a few business units are involved (Addison et al., 2002). For instance, companies can give kickbacks to earn mining rights. Therefore "... the bulk of the rents created in those economies are channeled by bureaucrats, the majority of whom are members of the politically dominant group ..." (Mbaku, 1992: 250). Rent seeking can also discourage economic diversification as the political and economic elites are satisfied with resource revenues. Global Witness (2002) notes that the Angolan government obtained 80 percent of its revenue from crude oil production. However, the Angola state and its component actors also engaged in illegal practices as political elites benefit from resource rents illegally by diverting from public accounts for private use. Some of them also receive kickbacks from business negotiations with oil companies (Cilliers and Dietrich, 2000). They are reluctant to adopt policies geared towards economic diversification or investment in social services.

In addition to economic issues, political factors play perhaps a more significant role in the problem of the resource curse especially for diamonds whose value and demand make them less vulnerable to some of the economic uncertainty of oil and other mineral resources.³ Poor governance in mineral-dependent developing countries can contribute to a resource endowment being more of a curse than a blessing. Weak institutions of governance, corruption, authoritarian rule, and nascent democracies are

³ The value of gems is relatively constant; therefore diamonds are not prone to price fluctuation and the boom and bust cycle typical of other natural resources.

attributes of poor governance that can result in a paradox of plenty (Basedu, 2005; Bannon and Collier, 2003; Karl, 1997; Le Billon, 2007, 2008; Omeje, 2008).

Geographical attributes of the resource can also contribute to a resource curse. The geographic distribution/location of a valuable natural resource such as gemstones and oil can affect its monitoring and control. This is especially the case for alluvial mineral resources that can be extracted with little training and investment. There is a tendency for a large influx of people into alluvial mining areas, with legitimate as well as criminal intent. A large influx of miners in diamond extractive locations, the presence of foreign diamond magnates, and porous borders have thwarted governments' efforts at controlling and securing the diamond industry in Angola, Democratic Republic of Congo, Liberia, Ghana, and Sierra Leone (Cilliers and Dietrich, 2000; Global Witness, 2004).⁴ This also makes it difficult for governments to provide law and order in the extractive regions (Ross, 2003; Reno, 1995). The situation is more serious when these governments lack the capacity to monitor mineral exploitation. The problem of inadequate state capacity is further aggravated when some government functionaries collude with illegitimate stakeholders to exploit mineral resources for private gains.

Widespread corruption is another major problem in resource rich countries in developing regions, including Sub-Saharan Africa. Its special significance in SSA is that while rent accumulation is evident there is the problem of equity in distribution of resources. When governments receive a high inflow of rents for

⁴ Mine operators often evade export tax if it is raised and smuggle diamonds to neighboring countries with low export taxes. A case in point is the smuggling of diamonds from DRC to Congo as the latter has a lower export tax. See Global Witness (2004).

natural resources (oil, minerals, gemstones) they may not have the technical capabilities to account for all of the rents. This creates an opportunity to siphon part of the benefits for personal use (Ross, 2003). This is more applicable to revenues obtained from mining and oil companies. Corruption is rife where institutions such as civil societies, the judiciary and others that can serve as checks and balances to government's activities are either weak or non-functional. Authorities can therefore create avenues by which natural resources can be accessed through legal and illegitimate channels. As a consequence, few economic and political elites in collusion with illegal agents benefit immensely while the majority of the people do not (Reno, 2003). It is estimated that about 50 percent of Sierra Leone's alluvial diamonds are smuggled out the country annually yet there are police officers, customs officers and monitors of mines whose responsibility is to ensure that diamond exploitation follows the legal channel. In Sierra Leone senior politicians and traditional heads are often accused of using diamonds for political gains. The pre-civil war period (from 1968 to 1990) was dominated by patron-client relations in which the ruling government used diamonds to appease local financial backers called 'supporters,'⁵ and business allies, most of whom were of Lebanese descent, while dissenters were either co-opted or suppressed (Davies, 2000; Fithen, 1999; Kabia, 2008; Reno,

⁵ In alluvial diamond mining in Sierra Leone, a supporter is a person who funds a mining project and also provides basic social welfare needs of laborers who dig and wash diamonds. These laborers are called diggers.

1995)⁶. Thus, rather than enhancing economic prosperity, valuable natural resources can create social problems.

1.2 Poverty and Inequality

A major social problem that stems from the resource curse is high prevalence of poverty and marked socio-economic inequality. Empirical evidence suggests that in resource-rich countries where the aforementioned economic and political conditions are pervasive, there is high incidence of poverty and striking inequality (Renner, 2002; Ross, 2001). This is more evident in alluvial diamond mining areas. The structure of diamond extraction and trade is configured in a way that results in significant economic disparity between diggers and dealers (Olsson, 2006).⁷ A dependency syndrome in which diggers are dependent on supporters and the chain of middle men in diamond mining and selling are partly responsible for this disparity. A report by Global Witness (2004) states that the average wage for alluvial diamond diggers in SSA is about one dollar a day (below the UN poverty line) while diamond dealers, and exporters take the lion's share of the income.⁸ Poverty is further exacerbated in local mining communities due to environmental damage, land expropriation and human rights abuses (Ross, 2001).

⁶ The All Peoples' Congress was the ruling government from 1968 to 1991 when the war started. They were however toppled by the military in 1992.

⁷ The major actors in diamond extraction are diggers/miners, license holders, supporters, managers, buying agents, and diamond dealers.

⁸ The estimated number of diamond diggers in alluvial diamond mines in Africa is 1 million. They produce an annual revenue of 1 billion dollars, which on average is about \$1000 per worker (Global Witness, 2004).

1.3 Access to Land

It should be noted that access and control over land-based resources is centered on power relations. A communal land system is prevalent in SSA and is generally beneficial for its people. However, there are instances in which its applicability is rather ambiguous⁹. Central governments and traditional authorities have considerable power over land rights and have strong influence in land allocation (Diamond Development Initiative, 2008; Ukiwo, 2008). While land in theory belongs to communities, in practice central governments have eminent domain in decision-making with regards to land for mineral/oil extraction. In many instances, land allocation decisions favor the economically and politically powerful while the ordinary people are marginalized. The interplay of these factors intensifies poverty. Socio-economic inequality is therefore prevalent, as a small percentage of the population owns a significant amount of the country's wealth. For instance, in oil rich Nigeria, politicians and few business tycoons control about 80 percent of the country's wealth (Bannon and Collier, 2003).

It is essential to point out that in some resource-rich countries the political, economic, and social effects of the resource curse accentuate greed and/or grievances that can culminate in conflicts of various intensities (Le Billon, 2008; Silberfein, 2005; Ross, 1999; Collier and Hoeffler, 2000; Wilson, 2006). Social conflicts between large scale mining companies and communities and between national governments/local authorities and communities, and amongst local miners are increasing in SSA (Andrew, 2003; Third World Network Africa,

⁹ Traditional authorities are regarded as custodian of community land yet central government has more power. Land use decisions do not always benefit local communities even though it is said to be for the 'good of the country.'

2001). Manifestations vary from demonstrations against traditional authorities, to protests against mining companies, violent confrontation between residents of mining communities and security officers of mines and national government paramilitaries (Ngoie and Omeje, 2008; Watts, 2004).

1.4 Political Consequences

There are other cases especially in SSA where mineral/oil dependent countries have created or exacerbated appalling economic and political conditions resulting in civil wars and secessionist movements. The risk is greatest when at least a third of the nation's GDP is obtained from natural resources exports (Collier and Hoeffler, 2000).¹⁰ The economic incentive of gaining access and control of natural resources can motivate rebels to launch a rebellion. If successful, they can obtain revenues to sustain the war and enrich themselves (Ross, 2004; Le Billon, 2003). For instance, in Democratic Republic of Congo rebels signed a contract with a foreign firm for the extraction of columbite-tantalite while they were fighting a legitimate government and such revenues assisted them in gaining power through the gun (Bannon and Collier, 2003; Johnson and Kayser, 2005). In Liberia, rebel leader Charles Taylor (who later became President) was able to trade illicit diamonds and timber for arms and ammunition to sustain his rebel movement (Sayndee, 2008; Smillie et al., 2000). The Revolutionary United Front (RUF) in Sierra Leone, with the support of warlord Charles Taylor, was able to sustain attacks on the government and people

¹⁰ In their seminal work, *Economic Explanations of Civil War*, Collier and Hoeffler (2000) underscore greed as pivotal in the incidence of civil wars. Others have emphasized grievances as primarily being responsible for the onset of civil wars.

of Sierra Leone by trading diamonds for arms (Hirsch, 2001; Kabia, 2008; Davies, 2006).¹¹

As regards secessionist movements, people in a resource rich region may have the economic incentive to launch a rebellion with the ultimate aim of seceding. This is more evident where there is high ethnic homogeneity within mineral-rich areas and heterogeneity nationally. They might be aggrieved by the unfair appropriation of mineral/oil wealth by central government while local communities bear the social and environmental costs (Renner, 2002; Ukiwo, 2008; Watts, 2004, 2008). The Niger Delta in Nigeria is a clear manifestation of what Michael Watts refers to as petro-violence. The Kasai and Katanga Provinces in Democratic Republic of Congo, and the Cabinda Province in Angola also exemplify the socio-environmental costs of mineral extraction (Ngoie and Omeje, 2008).

1.5 Environmental Degradation

Another area of concern is the environmental dimension of a resource curse, which has not been dealt with sufficiently in previous research. A number of Non-governmental organizations (NGOs) are now examining the environmental impacts and local livelihood implications emanating from resource extraction in developing countries.¹² It is evident that weak controls or regulation of diamond mining has wreaked environmental havoc throughout Africa and other developing regions. Partnership Africa Canada (2004) notes that in Angola, ninety

¹¹ It is estimated that RUF made between \$25 million and \$125 million during Sierra Leone's civil war.

¹² Earths Right International and Campaign for Just Mining are amongst those NGOs concerned about environmental impacts of mineral and oil exploitation in developing countries.

years of environmental neglect in mining areas have devastated large tracts of land, poisoned local water, forced indigenous populations to relocate, and marginalized their primary livelihood – agriculture. Nyame and Danso (2006) pinpoint land degradation, loss of biodiversity, and pollution of rivers as the environmental consequences of diamond mining in Birim, Eastern Ghana. It is estimated that in Sierra Leone mineral extraction accounts for 80,000 to 120,000 hectares of land mined out with no concrete reclamation plan (Partnership Africa Canada, 2006).

In fact, a World Bank review of extractive industries indicates that mining and oil exploitation in developing countries have a profound impact on the natural environment and the rights of marginalized indigenous groups (World Bank, 2004). Thus, there is a tendency for marginalized people in mining areas to become poorer due to a double jeopardy -- they do not benefit from the proceeds of mineral exploitation and are also deprived of their alternate source of agrarian livelihood.¹³

1.6 Regional Variation in the Resource Curse

While the natural resource curse is prevalent in SSA it is not ubiquitous. Some countries have lived up to the economic promise of the exploitation of abundant natural resources to enhance economic growth. Botswana and Namibia exemplify a resource blessing in Sub Saharan Africa. Good governance, an efficient regulatory system, a joint corporate-government venture, and the geographic concentration of diamond deposits are primarily responsible for

¹³ Destruction of wetlands and other farmland, and reduced forest have negative impact on the local local livelihoods of mining communities.

Botswana's success (Taylor and Mokhawa, 2003).¹⁴ However, Angola (diamonds and oil), the Democratic Republic of Congo (diamonds, columbite-tantalite, and copper), Liberia (diamonds and timber), and Sierra Leone (diamonds) have witnessed a resource curse. However, manifestation of the resource curse is case-specific and dependent on the historical, political and economic history of the country, the type and characteristics of the resource and the degree of development of institutions (Le Billon, 2005).¹⁵

Much attention has been given to economic and political explanations of the resource curse, yet social factors have not been given sufficient consideration. The role of social phenomena needs to be comprehensively addressed given that contextual and historical social patterns do shape the functioning of state institutions (Rosser, 2006). External contextual factors beyond dependency theory should also be factored in as they can facilitate or hinder development in resource-abundant countries¹⁶. Further, such discussions tend to be reductionist as they explain development in terms of resource endowments rather than examining them from a broader spectrum. Instead of asking why natural resources endowment results in negative socio-economic and environmental outcomes, a more pertinent question is what contextual political and social phenomena determine whether natural resources foster a country's development or underdevelopment?

¹⁴ Botswana's diamonds are mined by Debswana -a partnership between De Beers and the government of Botswana in which each has 50% shares.

¹⁵ Empirical evidence indicates that alluvial diamonds (a diffuse resource) that are located in remote areas (distant resource) are more susceptible to negative socioeconomic outcomes than kimberlite diamonds (a point resource). See Auty (2001), Le Billon (2003, 2008).

¹⁶ Dependency theory underscores a global system in which economic growth in the developing world is conditioned by the economic advancement of the developed world.

Resource-curse discourse is often centered on cross-country analysis of data yet there are increasing cases of what Bebbington et al. (2008) refer to as environmental and community-level “curses” that are outcomes of mineral expansion¹⁷. Specific variables that can be quantified are used in cross-country analysis. While this shows variation between countries, its aggregate output does not truly reflect variations at local levels and may omit some qualitative factors that are significant for a more detailed and robust explanation. Further, such analysis is informed by the political economy, which almost invariably neglects environmental ramifications.

1.7 The Focus of this Study

This dissertation adopts a case-study approach to gain a more nuanced understanding of the social and environmental conditions of the resource curse at a scale of the extractive location and nationally. The study explores how power relations influence the interactions of various diamond actors at various levels and how they are manifested in an extractive location – Kono District. In other words, it assesses the social, economic and environmental implications of diamond mining. For any meaningful investigation of the socioeconomic, political and environmental dimensions of the resource curse the vicinity of resource extraction and other levels of operation should be the foci of inquiry. Understanding local diamond mining dynamics in Kono District involves an examination of contextual political, social, and environmental factors. Through multi-scalar analysis (local,

¹⁷ Most of the national level analysis of the resource curse focuses on resource abundance and armed conflicts. See Olsson (2006), Le Billon 2008, Cilliers and Dietrich (2000).

national, regional, and global), the study portrays a comprehensive evaluation of diamonds as a resource curse in Sierra Leone.

This dissertation adopts a political ecology approach as a framework of analysis. Political ecology comprehensively addresses socio-environment interactions across temporal and spatial scales (Robbins, 2004). It emphasizes that political and economic power influence resource allocation and use (Bryant, 1998). Specifically, the study uses the actor-oriented approach to political ecology integrated with the politics of scale theory in order to appraise the degree of the resource curse in Kono District, Eastern Sierra Leone. By politics of scale we mean the positioning of scale at the epicenter of politics and power relations, and varied agendas of social actors. In other words, when scale is understood as the outcome and spatial tactics used by social actors to fulfill their political goals it is referred to as the politics of scale (Swyngedouw, 1997). Actor-oriented political ecology is appropriate as it focuses on how power relations influence the actions, motivations, and strategies of the various social actors involved in diamond exploitation in Kono District. Further the actor-oriented approach is significant as it allows us to link power relations to scale and politics of scale. In other words, politics of scale aids to explain how various actors have used scale as a strategy to satisfy their interests over those of others (Lebel et al., 2008; Purcell and Brown, 2005).

Most studies on oil or mineral resources have explored the socioeconomic aspects of the resource curse. Other works have appraised the political and economic dimensions of the curse using the political economy framework. Some

studies investigate mineral extraction and its environmental implications from a sustainable development perspective¹⁸. This research integrates the socioeconomic, political, and environmental dimensions of the resource curse at a local (mineral extraction) level and multiple scales of analysis in order to unravel the intricacies and complexities of diamond exploitation and its impacts.

I combined social and geospatial methods. For social analysis, I conducted structured interviews of 360 households in 12 towns/villages, and detailed semi-structured interviews of 49 key informants. Further, I conducted focus-group discussions with 10 diamond diggers groups, youth groups and women's groups. I also conducted archival research in Sierra Leone. Social analysis addressed issues related to the political, social, economic and environmental dynamics of the causes and impact of diamond exploitation. Geo-spatial analysis and satellite-collected Landsat Thematic Mapper (TM) and Enhanced Thematic Mapper (ETM) data were also used to derive the spatial pattern and change statistics in land use/land cover in diamond areas and non-diamond areas. The use of remote sensing and GIS allowed me to map and quantify the spatial and temporal dimensions of land use/land cover change in order to determine the degree of environmental change in the diamond mining chiefdoms.

1.8 The Study Area and Context

The study site, Kono District is located in the Eastern Province of Sierra Leone with an area of 5,641 square kilometers representing 7.8% of the total land

¹⁸ See works like Bannon and Collier's (2003) *Natural Resources and Armed Conflict*, Ross' (1999) *The Political Economy of the Resource Curse*, Robinson, Torvick, and Verdier's (2006) *Political Foundations of the Resource Curse*, Le Billon's (2005) *Fuelling Wars: Natural Resources and Armed Conflict*. Most of these works underline how mineral exploitation results in negative economic growth and how weak state institutions also contribute to negative socioeconomic outcomes.

area of the country (NMJD, 2007). It consists of fourteen chiefdoms, six of which are chiefdoms where diamond mining is the principal economic activity (Figure 1.1). Eight are non-mining chiefdoms where agriculture is the primary economic activity. As of 2004, the population of Kono District was 335,401 (Statistics Sierra Leone, 2006) with a density of 60 people per square kilometer, the highest in the diamond regions. The average annual population growth rate between 1985 and 2004 was 7.4 percent of which more than half was due to in-migration compared to the national average population growth rate of 2.3 percent (Statistics Sierra Leone, 2006).

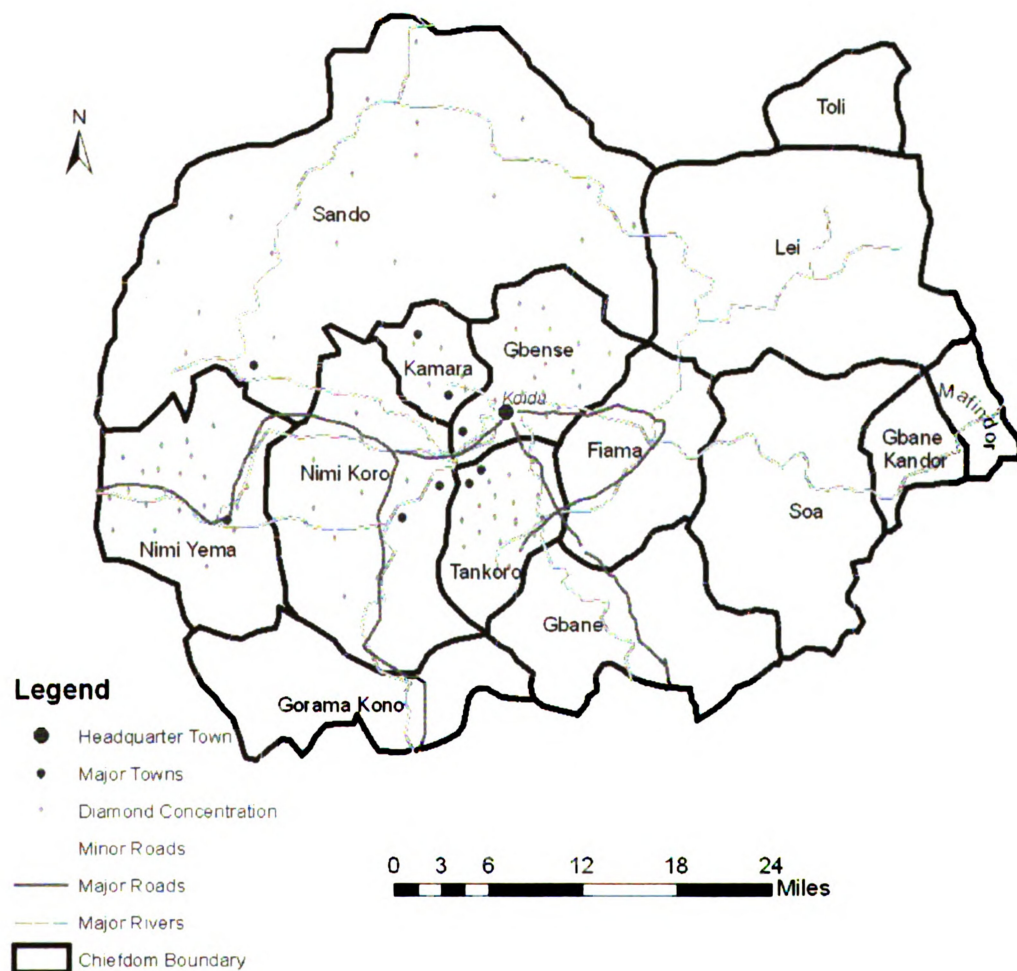


Figure 1.1 Map of Kono District

The topography of the district consists of plateaus, hills, valleys and considerable amount of inland swamps (Odell et al., 1974). The rocks in the district are part of the Archaean granite-greenstone terrain. The greenstone belts comprise low-grade metamorphic rocks, mainly schist, amphibolites, and quartzite (Williams, 1978). The rocks are mineralized into diamonds. Kono has a worldwide reputation for quality gem diamonds¹⁹

The drainage in Kono consists of a network of two rivers, the Bafi originating in northeast, and the Male, originating in Guinea. The tributaries of these rivers form a dense network that has transported and deposited considerable amounts of gravel containing millions of carats of alluvial diamonds at various parts of the district (NMJD, 2007). Initially, its vegetation was tropical rainforest but over the past 70 years deforestation has occurred as a result of economic and social activities²⁰. Currently, some tropical forest exists especially in the eastern parts of Kono District while very few patches of secondary forest can be found in central and western parts of the district.

Kono District was chosen for this study because its principal economic activity - diamond mining – is believed to have contributed to its underdevelopment (Zack-Williams, 1995). Kono district is also a land of contrasts. Despite the endowment of diamonds, it has one of the highest poverty levels in the country.²¹ Further, alluvial and kimberlite diamond mining are

¹⁹ The world's third largest diamond was found in Sierra Leone and weighed over 900 carats.

²⁰ Diamond mining may have significantly contributed to deforestation especially in the central and western parts of Kono District where it is concentrated.

²¹ Rural Kono has a poverty level of 79.6% compared to rural Pujehun' 59.6% according to the Diamond Industry Annual Review – Sierra Leone (PAC, 2006).

believed to have affected local livelihood, especially agriculture (Gbekie, 2003; Levin, 2005; USAID, 2005).²²

The proposed study focuses on Kono District because it is also an area of conflicts – civil war and community conflicts. The civil war had a tremendous impact on the district. Proceeds from diamond mining in the district were the economic base of the rebel Revolutionary United Front (RUF) for the greater part of the civil conflict (1991-2002). The RUF forced youths that were forcefully conscripted to mine diamonds (Hirsch 2001).

1.9 Research Objectives and Hypotheses

The overarching objective of this study is to examine how a valuable resource like diamonds can become more of a curse than a blessing in Sierra Leone using Kono District as a case study. The specific objectives are as follows:

1) to assess the socioeconomic impact of diamond exploitation in Sierra Leone through a historical lens; 2) to determine whether spatial pattern and location of alluvial diamonds may influence illegal mining and smuggling; 3) to determine whether the power relations amongst the various social actors could influence socio-economic conditions in mining communities; 4) to examine the extent to which the multiple interests and actions of social actors at various scales may create community conflicts; 4) To determine the proximate and ultimate causes of environmental degradation, the spatial pattern and extent of land use/land cover change, and the role of diamond mining in both.

²² The land in the diamond areas is scarred with thousands of unregulated mining pits, overturned soils and pools of stagnant water. Forests have also been exploited heavily for fuel wood and charcoal production.

In attempting to achieve the objectives, this research tested four descriptive hypotheses. The first is: *introduction and maintenance of patrimonial politics and growing informalization of diamond exploitation in Sierra Leone have historically reduced the positive role of diamonds in national and local economic development largely into a resource curse.*

In order to address the first hypothesis, I used archival data, secondary data, oral history accounts, semi-structured interviews and informal interviews. These multiple sources enabled a detailed explanation of the history of diamond exploitation and the declining role of diamonds to the country's socioeconomic development.

The second hypothesis is: *diverse social actors at local, national and international scales have taken advantage of the weak regulatory state apparatus in Sierra Leone to exploit diamonds in ways that turned a rich endowment of a rare, portable, precious mineral more into a curse than a blessing.*

In this dissertation, a weak regulatory state is one that has some or all of the following characteristics. The state lacks the technological and human capacity to monitor mines. It also cannot implement mining policies effectively. Further, endemic corruption and thriving informal market prevail. Elements of patron-client support are manifested in a weak state. Chiefs have enormous political and economic power and play dominant role in access and control of land. A weak state normally succumbs to powerful international stakeholders such as the World Bank Group. The existence of a weak regulatory state has created

conditions favorable for local and international stakeholders to pursue their own vital interests at the expense of national integrity and local livelihood.

In order to address the second hypothesis, I used a combination of structured interviews, semi-structured interviews, focus groups, secondary data, oral history accounts, and archival data. The surveys provided information about governance and wider political-economic factors and how international and national policies interact with local realities. These multiple sources enabled a more robust explanation of the social dimensions and extent of the resource curse within the state's regulatory framework.

My third hypothesis, which is related to the second states: *geographically diffused and remotely-located, but highly valuable natural resources are more a liability than an asset.*

The political geography of the resource can influence the level of control government has on a natural resource. Accessibility of diamonds, for instance, is dependent on the spatial spread of the resource - diffuse or point-source resource and mode of exploitation (Auty, 2001; Le Billon, 2005). Diffuse-area resources like alluvial diamonds are labor-intensive activities that are widely accessible. The geographically diffuse nature of the resource and its remoteness, with many poor and unsupervised laborers makes it difficult for government to maintain law and order and collect taxes. This makes it vulnerable to contraband influences. In contrast, point resources are likely to occur in few locations (two dykes in Tankoro and Nimikoro Chiefdoms Kono District, and one dyke in Tongo Field, Bambara Chiefdom Kenema District) and are exploited by a few capital-intensive

operators (Le Billon, 2005; Olsson, 2006).²³ Proximate resources are more firmly under government control while distant resources located in remote areas and along porous borders tend to be areas of weak government control (Le Billon, 2005). Alluvial diamonds in Kono are characterized by both diffusion and remoteness and therefore it is essential to investigate whether these spatial geography characteristics facilitate illicit diamond mining and smuggling or not. Responses obtained from household interviews about their perception of the diffuseness of alluvial diamonds and their remoteness from central government control were utilized. In addition, responses from key informants and general views of focus groups about the diffuseness and location of alluvial diamonds provided additional information that were used to prove the hypothesis. Supplementary information was also garnered from secondary data. A map of known locations of diamond deposits based on government provided additional information (Figure 1.8)

My fourth hypothesis is that *environmental conditions in diamond chiefdoms are worse than in non-diamond chiefdoms*. I posit that environmental degradation is more marked in diamond areas than in non-diamond areas because of diamond-mining activities. To address this hypothesis, responses from interviewees in the diamond and non-diamond areas were analyzed. I also used land cover change analysis of remotely sensed satellite data to compare land cover change from 1986 to 2007 in the diamond and non-diamondiferous chiefdoms.

²³ Koidu Holdings Limited mines kimberlite diamonds in Kono districts. These dykes are about 150 m long.

In sum, the study examines the social, economic and environmental dimensions (both as drivers and impacts) of the resource curse. Socially, it examines the socio-political (power dynamics) drivers and consequences surrounding inequitable access to diamond resources, and the economic focus examines the economic dimensions. It assesses the roles that a weak regulatory state apparatus and spatial and scalar politics play on the inequitable access to diamond resources and its consequences. Finally, the environmental impacts of the social, economic and other factors are examined in relation to what extent they represent a curse.

1.10 Significance of Study

This study contributes to the development literature dealing with how a valuable natural resource becomes more of a curse rather than a blessing. It examines how important determinants of a weak regulatory state contribute to multiple symptoms of the resource curse. The research provides a detailed micro-level analysis of social actors in the diamond industry while also examining structures at the national and international scales that have impact on local resources. While considerable political ecology research has been done on human-environment interactions in relation to agriculture, forestry, and water, the relationship between diamond mining and its socio-environmental ramifications has not been given sufficient attention. This study therefore contributes to political ecology with respect to mineral resources. Furthermore, research on the paradoxical negative relationship between natural resource endowment and socioeconomic outcomes has been dominated by the political economy

perspective. This dissertation thus expands study on the resource curse beyond the political-economic focus as it incorporates the environmental dimension of the curse in addition to other wider political economic indicators.

The research is also significant as it moves beyond the resource curse to specific dynamics that construct it, thereby opening opportunities to find solutions. The study provides concrete information that has policy implications that can not only mitigate the resource curse but could transform mineral resources into a catalyst for sustainable development at the local and national levels. Issues such as the geographical characteristics of the resource and security measures also have policy implications in terms of creating an effective regulatory system. It is also useful in guiding development policies in other SSA countries in which symptoms of the resource curse exist.

1.11 Organization of Study

The dissertation is organized into seven chapters. Chapter One introduces the study, presents the problem of the natural-resource curse with particular reference to oil and mineral resources in SSA. The chapter also covers the purpose of study, hypotheses, and a brief description of the study area, Kono District, and significance of the study. Chapter Two includes the literature that informs this study and the theoretical framework. It examines the suitability of the political ecology framework for this study and its limitations. The literature encompasses theory on the social production of scale, development studies related to oil and mineral resource curses, mining and environment studies, and sustainable livelihood studies. Chapter Three deals with the research

methodology. This includes the rationale for the methods, analysis of social surveys, and geo-spatial analysis of land use/land cover change. Findings of the research start in Chapter Four. Chapter Four provides contextual information on the wider political economy and state policies in regard to diamond exploitation in Sierra Leone. Based on archival, secondary data, and oral history accounts this chapter highlights the historical development of diamond mining and marketing in Sierra Leone. I discuss this chapter in four phases: colonial period; independence to pre-civil war period; civil war, and post civil war periods. Chapter Five focuses on empirical analysis of diamond exploitation in Kono District. First, it explores illicit diamond mining and marketing. Second, it investigates the socioeconomic dynamics of diamond mining and economic disparity between diggers and supporters. Third, it examines diamond-driven conflicts at the community level. Lastly, the chapter examines the spatiality of diamonds in regard to the resource curse. Chapter Six assesses environmental degradation in Kono District. This encompasses perceptions of environmental degradation in the mining and non-mining chiefdoms, the spatial pattern and extent of land use/land cover change and how it has been influenced by diamond mining. Chapter Seven consists of concluding statements and policy implications.

CHAPTER 2: THEORETICAL BACKGROUND AND LITERATURE

2.1 Political Economy

Political economy is the traditional theoretical approach that has been used to address the sometimes paradoxical relationship between oil/mineral resource abundance and underdevelopment (the so called resource curse). A central tenet of this approach is that political factors are crucial in determining economic outcomes. Political economy underscores how power relations structure the institutions, processes and outcomes of resource exploitation. In discussing a resource curse, political economy examines how political institutions, rules, policies and decisions at various levels influence socio-economic choices in a society (Keefer, 2004; Ross, 1999). The role of the state in the social relations of production and its linkages to the global economy is emphasized.

Within political economy, some developing countries endowed with and heavily reliant on oil or mineral resource exploitation are referred to as rentier state. Rentier states are reliant on resource revenues, especially those paid by transnational companies, and on profits from their equity stakes in transnational companies' investments (Karl, 1997). Oil/mineral revenues are mostly obtained and controlled by the governing elites many of whom misappropriate rent meant for national development (Omeje, 2008). In other words, political elites use their political power for personal economic accumulation at the expense of society.

While the political economy approach focuses on the political and economic aspects of a resource curse, the study goes beyond the political and economic dimensions of the resource curse. It embraces political and economic

discussions, cornerstone of the political economy framework, as well as the role of social forces and the environmental implications of resource exploitation. As a consequence, it requires the adoption of a more multidirectional framework of analysis that captures the various strands of the problem. It engages in a historical and contextual analysis of the political, economic, social, and environmental factors. Such analysis is the centerpiece of political ecology, an approach that is utilized in this dissertation.

2.2 Political Ecology

There are numerous definitions of political ecology but a central artery of these definitions is terrestrial ecosystems. As Blaikie and Brookfield (1987:17) note,

“ The phrase ‘political ecology’ combines the concerns of ecology and a broadly defined political economy. Together this encompasses the constantly shifting dialectic between society and land-based resources, and also within classes and groups within society itself.”

Political ecology examines society and environment interactions across different spatial and temporal scales (Blaikie and Brookfield, 1987; Robbins, 2004). This perspective adopts the view that societies are heterogeneous, and that political and economic power affect resource allocation and use. Starting with local dynamics and histories, it places the society-environment discussion within the context of the wider political economy (Harvey 1996). Within political ecology, local land use, land cover change, and environmental problems are linked to state policies, interstate relations and global capitalism (Blaikie and Brookfield, 1987).

Political ecology emerged in the 1970s and drew much from cultural ecology and natural hazards research with a very strong Marxist perspective.²⁴ Cultural ecology focuses on the evolution of cultural systems through environmental adaptation (Bates and Fratkin, 1999). Cultural ecology explores local socio-cultural practices and surrounding socio-ecological relationships for a single geographically bounded community or village, or inter- community comparison. In comparison, political ecology examines the importance of micro-level studies of single communities or ecosystems and their linkages and processes at broader and multiple scales. Political ecology has been utilized mainly in Third World settings as an alternative approach to a deterministic and apolitical nature of environmental research.

Political ecology seeks to overcome deterministic approaches of other traditional explanations of environmental degradation. These include Malthusian theory, the tragedy of the commons thesis, and ecological equilibrium models. The main thrust of political ecology, however, is how political, economic and biophysical processes and actions of social actors at various scales combine to restrain opportunities for human agency at the local scale or open new opportunities for local action. Several studies in political ecology therefore examine how land managers struggle against policies imposed by the state, socioeconomic relationships, and the physical environment (Bassett, 1988; Carney, 1996; Peluso and Watts, 2001; Robins, 2004; Zimmerer and Bassett,

²⁴ Third World Political ecology is an alternative way to address issues related to environmental change in developing countries. It counters the orthodox claim that land use activities of ordinary people are responsible for environmental degradation (Blaikie and Brookfield 1987; Watts 1983).

2003). Some of these studies advocate a more balance approach to political ecology while others emphasize politics or ecology.

Political ecology has been examined from the ecocentric and anthropocentric perspectives. Proponents of the anthropocentric perspective advocate more 'politics' in political ecology research while those favoring the ecocentric approach emphasize more 'ecology'.²⁵ Scholars embedded in ecological sciences criticize political ecology for being too focused on the social and political dimensions of resource access (anthropocentric) while very little attention is given to the biophysical and ecological realities of the natural environment (Walker, 2005). Zimmerer and Bassett (2003) maintain that the environment should not be viewed as simply a stage or arena in which struggles over resource access and control takes place. They advocate for environmental agency and capability to influence human behavior as behavior influences the physical environment. In other words there is a dialectically opposed relationship between nature and society. Irrespective of the area of emphasis, however, political ecologists utilize a combination of theoretical strands.

Rather than a unitary theory, political ecology is an amalgam of approaches for socio-ecological analysis (Peet and Watts, 2004). The multiple approaches or themes are pivoted on the focus of analysis. Paul Robbins encapsulates these various approaches in four key themes: degradation and marginalization; environmental conflict; conservation and control; and environmental identity and social movement (Robbins, 2004:13-15).

²⁵ Bryant and Bailey's 'politicized environment' underscores the need for more politics (Bryant and Bailey, 1997). Similar sentiments are expressed by Michael Watts (Watts, 1996).

The degradation and marginalization theme maintains that natural resources (on which communities are dependent) become overexploited due to state development interventions and integration in regional and global markets (Hecht and Cockburn, 1989; Schmink and Wood, 1992). The outcome is increasing poverty, and cyclically increasing overexploitation of natural resources. A related assertion is that modernist development efforts to augment production systems of local people have instead led to diminution in sustainability of local practice and concomitantly to a decrease in the equity of resource distribution. Schmink and Wood's (1992) works on deforestation in the Amazon illustrate the degradation and marginalization theme. They emphasize that market expansion has increased class stratification, and the emergent hierarchical arrangement of groups' struggle over forest products and agricultural productivity result in more degradation of forests. The integration of market economies has resulted in competition amongst market producers. Imbalances in landholdings have emerged and with falling commodity prices, marginal producers on very small landholdings 'overcrop' and deforest disproportionately.

The environmental conflict theme posits that resource enclosure and appropriation by state authorities, private firms, or social elites create 'scarcity' of natural resources that trigger conflict between groups (including those defined by gender, class, or ethnicity). Schroeder's (1999) work on the Gambia illustrates how the involvement of non-governmental organizations (NGOs) in fostering women's horticulture resulted in gendered conflict. Men directed the horticulture project on garden plots. Since men predominantly control tree resources, this

allowed them also to seize control of garden lands. In managing horticulture women are required to manage trees as they are grown on the same land. In this context, two rural livelihood schemes – gardening and agroforestry – were drawn into a gender struggle. Environmental problems are socialized also when particular local groups are in control of collective resources at the expense of others. This is applicable to community based natural resource management approaches.

The conservation and control theme points out that control of resources has been removed from local producers by the implementation of programs to preserve “sustainability,” “community,” or “nature.” The effect is the disruption of local systems of livelihood, production, and socio-political organization. In fact, state authorities and other players have counteracted local sustainable production systems and have described such activities as unsustainable in the struggle for control of resources. The creation and protection of parks and game reserves in East and Southern Africa exemplifies this thesis.

Robbins’ fourth thesis, environmental identity and social movements has very strong links with post-structural approaches, especially what Peet and Watts (1996; 2004) refer to as “liberation ecologies”. Modification in environmental management regimes and environmental conditions has created opportunities or has forced local groups to secure and represent themselves politically.²⁶ This is a new form of political action as their ecological stands link different groups across class, ethnicity and gender.

²⁶ Social Movements in the mining areas of Peru and Ecuador is an example of local political action (Bebbington et al. 2008).

Three of Robbins' four themes – degradation and marginalization, environmental conflict, and environmental identity and social movement – can be utilized in examining the socio-environmental dimensions of diamond exploitation. The role of the state and international political economic institutions is a common thread in his themes. However the environmental identity and social movement theme/approach differs slightly as it underscores local political action as a response to traditional governance structures.

In addition to Robbins four-theme classification, key approaches to political ecology can be discussed within broader categories. This also allows some consideration of theoretical insights to the respective approaches. These broader categories of approaches are: 1) regional political ecology; 2) post-structuralist political ecology; 3) a politicized environment; and 4) feminist political ecology.

2.3 Approaches to Political Ecology

2.3.1 Regional Political Ecology

Regional political ecology which is sometimes referred to as structural political ecology, draws mainly from Blaikie and Brookfield's chain of explanation.²⁷ The chain of explanation is an explanatory device that links levels, scale and spaces in analyzing environmental problems. In other words, environmental issues are influenced by local, national, and global factors. The

²⁷ Blaikie and Brookfield's "chain of explanation" is an explanatory device that links levels, scale and spaces in analyzing environmental problems. Using land degradation as example, Blaikie starts with physical changes in soil and vegetation and their associated economic symptoms, links these to location-specific land-use practices and individual and group decision-making processes, before ending with wider contextual forces associated with the state and the international economy.

land manager (who can be a farmer) is central in decision-making with regards local resource use. Within regional political ecology, Blaikie and Brookfield (1987) underscore the roles of global capitalism and the state in the exploitation and marginalization of the ordinary people. They note three forms of marginality: ecological marginality, economic marginality and political-economic marginality. The land manager is politically marginalized as he/she is excluded from political decisions that include the imposition of heavy taxes by the state. As a consequence he/she intensifies land use (for example, agricultural activities) leading to ecological marginality. Intensified land use decreases agricultural yields, which results in economic marginality. Blaikie and Brookfield's work on land degradation clearly illustrates these forms of marginality. It should be noted that structural regional political ecology was primarily materially-oriented and was applicable mainly to Third World countries.

In addressing Third World issues, regional political ecology explores three major propositions. Firstly, the roots of environmental problems are social, economic, and political. Access to and control over natural resources are major determinants of environmental problems in developing countries (Carney, 2004; Bassett, 1988). Secondly, the relationship between society and natural resources is dialectical and in most instances contradictory. For instance, there is mutual causality between poverty and environmental degradation. Through poor management of resources, poverty can induce environmental degradation and environmental degradation can exacerbate poverty because most rural dwellers are heavily dependent on natural resources for their livelihoods (Schmink and

Wood, 1987; Jarosz, 1993). Thirdly, the focus is on social actors especially the poor viewed from a historical, economic, and political context, with an emphasis on the role of the state (Blaikie and Brookfield, 1987; Peet and Watts, 2004; Basset, 1988).²⁸ Thus, the adoption of regional political ecology in Third World studies is relevant as it presents an in-depth and complex analysis of socio-environmental issues.

2.3.2 Post-structuralist Political Ecology

Post-structuralist political ecology is another approach that is gaining pre-eminence. A post-structuralist perspective is the ‘analysis of the production of social reality which includes the analysis of representations as social facts inseparable from what is commonly regarded as “material reality”’ (Escobar, 1996:46). Post-structuralist approaches maintain that language is part of social reality. Therefore, discourses about the environment have an essential role in post-structuralist political ecology because they can have real impacts on policy interventions and the decisions of local land users (Peet and Watts, 1996, Escobar, 1996).

Another concept emphasized by post-structuralist political ecologists is the construction of environmental realities by scientific discourse. Fairhead and Leach’s (1998) work clearly illuminates this notion. Policy makers and scientists have long regarded the islands of dense forest in the savanna region of ‘forest Guinea as the last vestige of extensive forest cover that has been degraded and rapidly degrading as a result of inhabitants’ land use. Their study, however,

²⁸ In examining farmer-herder conflict in Ivory Coast, Bassett illuminates the role of the state in such contestation (Basset 1988).

proves that people around villages have created forest islands. Fallow vegetation has been transformed to more woody vegetation and consequently secondary forest. This has shown that though there is population growth in this area, land use management by the locals has led to more rather than less forest. Their findings question the development of century-long erroneous policy of environmental reality in West Africa. In a similar vein, Bassett and Zueli's (2003) work on Ivory Coast found a contradictory answer to the conventional policy and general view that desertification is the result of occupants' land use activities. Their findings suggest that while increase in cattle population results in diminished grassland it concomitantly increased wooded vegetation. This shows that 'one-size-fits-all' policy is not always true and environmental conditions are context specific. Thus whether an area is classified degraded, endangered or protected is normally defined or influenced by scientific and institutional discourses that are perpetrated by decision-makers who have power and authority.

2.3.3 Politicized Environment

The manifestation of power is a centerpiece of the 'politicized environment,' a conceptual focus that has gained momentum in political ecology (Bryant and Bailey, 1997:27-29). According to this perspective, access to and control over resources, in general, and environmental conflicts specifically, can be perceived as demonstration of differentiated power relations. Power then becomes the key concept to be analyzed so as to specify the 'topography' of a politicized environment. Politics, power relations, institutions of civil society, and environmental regulation issues are comprehensively examined. Emphasis on the

means through which environmental control, access and property rights are portrayed in the context of social relations, and how negotiation and contestation occurs within the political arenas of the household, work-place, and the state are explored (Bryant and Bailey, 1997; Bryant, 1992; Peet and Watts, 1996; Rocheleau et al., 1996). In a nutshell, the politicized-environment focus emphasizes power relations amongst social actors and its socio-environmental outcomes.

An approach that is deeply rooted in the 'politicized environment' is the power-based, actor-oriented political ecology. This perspective recognizes that environmental issues are explicitly "socialized and are influenced by socio-political processes and power relations occurring at different scales" (Robbins, 2004:14). An actor-oriented approach fosters understanding about the interests, characteristics, and actions of different actors in relation to processes of social, political, and environmental change (Bryant and Bailey, 1997). Thus, through an actor-oriented approach, researchers have underscored the relevance of both structural factors and the role of human agency in determining social and environmental change (Giddens, 1984; Long and Long, 1992).

The actor- oriented approach is useful for socio-environment research in a number of ways. Firstly, it demonstrates that outcomes of conflict and cooperation are influenced by the interaction of various actors that at times pursue disparate interests. Secondly, it is explicitly recognized that outcomes are mutually determined by elements of structure and agency across multiple analytical scales. For instance, Bury (2008) illuminates how structural forces and

agency at multiple scales influence local outcomes by examining a transnational corporation and livelihood transformation in the Peruvian Andes. He notes that through mineral rights with the Peruvian government, the company Minera Yanacocha (MYSA) has access and control over considerable amounts of land, which reduces the available land in the community. Locals moved to more mountainous areas to engage in farming practices, an essential ingredient in their livelihood portfolio. Thirdly, the power relations that affect interactions between various social actors are reciprocal but often not symmetrical (Bury, 2008).

An actor-oriented political ecology approach is relevant to understand how the behavior of social actors' operating at different scales influences local interaction with resources. It examines the impact of state, corporate, and civil society actors on social and environmental change in multi scalar analysis (Bryant and Bailey, 1997). The actor- oriented approach has also been utilized by observers who examine local organizations and institutions beyond the household and have shown its relevance in the managing and accessing local resources in addition to linking with larger scale actors and processes (Bebbington, 1999; Sheridan, 2001). Peluso (1996) utilizes the actor-oriented approach in examining the impact of the state and market intervention on property rights and landscape change in Indonesia. Actor-oriented political ecology has also been adopted in examining resource conflicts in Jharkland, India (Jewitt, 2008). Further, the actor-oriented approach in political ecology is significant as it allows researchers to show causal relationships between the activities of particular actors operating at multiple scales and local resource transformation and utilization (Bury, 2008).

Actor- oriented research also depicts complex relationships between local places and larger scales of analysis, without having to worry about what analytical scale is the best one because the various actors lead the analysis to their various operational scales. In sum, analysis of environmental outcomes, struggles over resources, and political and social change within an actor-oriented approach can help identify and examine the actors, their networks, and the contingent and heterogeneous outcomes through such interactions.

Another concept that has been examined within the politicized environment is the politicized and conflicting nature of environmental relations based on the environmental entitlement perspective.²⁹ Environmental entitlements can be defined as alternative sets of utilities obtained from environmental goods and services that social actors have legitimate effective command over and which are instrumental for achieving wellbeing (Leach et al., 1999). The alternative set of utilities may include direct uses of commodities, e.g. food, fuel, market value of the resources, or rights to them. The environmental entitlements perspective examines how social actors at different strata command environmental goods and services that are essential to their well being (Bohle et al., 2000). It focuses on how entitlements in regard to natural resources are distributed and reproduced, negotiated and fought over, lost and won in violent environments (Peluso and Watts, 2001). Leach et al. (1999) assess how different social actors control environmental goods and services that are fundamental to their well being. They note that environmental entitlements involve negotiations

²⁹ According to Amartya Sen (1984: 497) entitlements represent ‘the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces’

among social actors, and include power relationships and the debates over meaning rather than fixed rules. The environmental entitlement perspective has been useful in addressing community-based natural resource management, a theme that has been widely addressed in academic discourse.

2.3.4 Feminist Political Ecology

Another strand of political ecology that gained momentum is feminist political ecology. Feminist political ecology refers to gender's place in the political ecological landscape. It explores gender as a factor in ecological and political relations (Hovorka, 2006). Feminist political ecology explores the convergence of gender, science and the environment in academic and political discourse in everyday life, and in the social movements that have brought new impetus to it. It focuses on gender and its interaction with class, race, age, ethnicity and nationality. Gendered environmental rights of access and control as well as responsibilities to procure and manage resources for the household and community are explored in this strand of political ecology research (Carney, 1993; Mackenzie, 2003; Rocheleau et al., 1996; Schroeder, 1999). These rights and responsibilities are applicable to resources as well as the quality of the environment. Feminist political ecology also addresses gendered division of power and labor to preserve, protect, change, construct, rehabilitate and restore the environment and to regulate the actions of others to explain socio-ecological outcomes. The works of Judith Carney(2003) illustrate the gendered land and labor nexus in agricultural production in the Gambia. Access and use rights to land are gender specific. Both men and women are engaged in household food production and also produce goods for sale. Growth in market for groundnuts in the colonial period meant that men exerted more energy on peanut

production. Consequently, women became primarily responsible for lowland subsistence rice production while men concentrated on peanut cash production. The advent of rice mechanization and later horticultural food crop development further exacerbated women's plight as they were required to cultivate new areas and expended longer time on domestic food crop production. These included areas where women initially cultivated crops for sale, leading to a loss of women's autonomy. The outcome was divisive as women asked for cash compensation, withdrew their labor, and politically challenged agricultural development schemes (Carney, 2001, 1993; Carney and Watts, 1991). Thus feminist political ecology has brought new insights to socio-economic stratification and differentiation grounded in unequal power relations between men and women and its environmental ramifications.

It is essential to point out that regional political ecology, post-structural political ecology, environmental politics, and feminist political ecology have two common attributes. They are: (1) power relations between the various segments of society influence socio-environmental outcomes and (2) the socio-environmental processes occur at different temporal and spatial scales. However, there are some differences amongst them. Regional political ecology is mainly influenced by structures in which the role of the state and its national policies, laws and instructions, and global capitalism strongly influence socio-environmental outcomes. In contrast, post-structuralist political ecology underscores the role of environmental discourse, narratives, and meanings in addressing socio-environmental outcomes. Although environmental politics emphasizes politics, it also underscores the role of structure and agency in determining socio-environmental impacts. The role of social actors and the emergence of social movements and local

politics is on the ascendancy. Feminist political ecology however focuses on gender relations and struggles in various social organizations, locations, and space. In most instances, it pinpoints the need for women empowerment in social processes leading to environmental change.

2.4 Application of Theme in Study

While several approaches or themes have been examined in the above discussion the current study adopts an actor-oriented approach of political ecology nuanced with a social construction concept of geographic scale (Bury, 2008; Jewit, 2008; Sheridan, 2001; Zulu, 2009). Social construction of scale refers to a geographic scale that is transformed as a result of socio-political actions at a particular level or levels (Swyngedouw, 1997). This research examines how power relations between the various stakeholders in the diamond industry are manifested socio-environmentally. It utilizes the actor-oriented approach based on the assumption that the costs and benefits of using natural resources (in this case diamonds) are distributed unevenly. The differences among social actors imply wealth formation for some and impoverishment for others, and it also alters the ability of actors to control or resist other actors (Bryant, 1997:29). Further, it explores the interests and motivations of the various social actors, the levels of power that they wield, the strategies that they use, the spatial-scalar dimensions of these strategies (e.g. porous boundaries), and their social, economic, and environmental impacts (focusing on local livelihoods). The study explores how various actors in Sierra Leone's diamond industry use scale as a strategy to advance their motives and interests over other actors. In other words, how the

social production of scale is utilized and transformed by social actors for socio-economic and environmental goals. Illicit diamond trading is one example of how diamond stakeholders utilize their operational scale to achieve their economic and political interests. This study addresses issues related to some of the central themes of political ecology as espoused by Robbins (2004): degradation and marginalization, environmental/resource conflict, and environmental identity and social movements. Thus by adopting the power-based, actor-oriented political ecology approach the current study aims to “follow” main social actors across scale, and explore themes of social domination and marginalization.

Notwithstanding its widespread application in socio-environmental research, political ecology has been criticized for underscoring the political at the expense of the ecological dimensions of human-environment interactions (Walker, 2005; Vayda and Walters, 1999; Walker, 2005; Zimmerer and Bassett, 2003). It has also been criticized for emphasizing the ecological while downplaying politics (Walker, 2007). Others say that it lacks disciplinary coherence that may constrain intellectual and policy influence (Bryant, 1997; Peet and Watts, 2004; Schubert, 2005). The current study utilizes the actor-oriented political ecology focus so as to avoid the ‘local trap’ as it “follows” the main social actors across their operational levels. Further, the dissertation engages the social production of scale (politics of scale) literature so as to inject a theoretical focus on scale that is often lacking in political ecology. Further, the politics of scale prevents the ‘local trap’ in which the local is privileged over other scales of analysis. Thus, its emphasis on the socio-spatial dimensions of power relations

surrounding resource exploitation (in this case diamonds) within an actor-oriented approach makes it overcome these shortcomings. Further, its integrative, theoretical and thematic properties make it an exceptionally suitable analytical approach for this study. It informs critical examination of the complex interplay between political, social and economic and environmental processes surrounding diamond mining. Such linkages are often missing in purely mining-based research or purely environmental studies, or political-economic analysis of the resource curse.

The study extends political ecology analysis to a natural resource, diamonds, which is often handled as a political economic issue at macro scales (e.g. national and international) at the expense of local socio-spatial, political, and environmental dynamics of diamond mining. Kono District also permits a unique consideration of the impacts of extreme conflict in the form of a civil war. In addition to potential contribution to literature in political ecology, natural resources management, mining, and development, this study has policy implications for understanding and balancing mining, environmental conservation and rural livelihoods in Sierra Leone and other African countries in similar situations. The multi-directional approach necessary to conduct such analysis not only calls for a political ecology approach, but also dictates multiple and hybrid research methodologies in the social and natural sciences, as shown in the methods section.

2.5 Socio-spatial Relations and Politics of Scale

Scale is a fundamental aspect of geography and is pivotal in geographic analysis. The concept of scale in geography is subject to considerable debate especially in human geography. The difficulty in understanding what is meant by scale is partly due to the different and often implicit definitions and models that are often employed without clear distinction (O'Lear and Diehl, 2007). As a consequence, conception of geographic scale ranges across a spectrum of almost intimidating diversity (Sheppard and McMaster, 2004).

Gibson et al. (2000) identify the following four scale-based theoretical areas fundamental to explanation in the sciences: the degree to which scale, extent and resolution influence identification of patterns; how disparate levels on a scale affect explanation of social phenomena; how theoretical proposition obtained about phenomena at one level on a spatial, temporal, or quantitative scale may or may not be generalized to another level; and how optimization of process can be done at specific points on a scale. The first three categorizations are relevant for the current study investigating diamonds as a resource curse in Sierra Leone.

Based on the political geography perspective, socio-spatial scale is “ the nested hierarchy of bounded spaces of differing sizes, such as the regional, national and global” (Delaney and Leitner, 1997: 93). For a considerable period of time, scale has been regarded as either natural levels of organization (the local, national, regional, or global) or arbitrary chosen to fit the researcher's methodology. However, scales are both the realm and outcome of social relations and struggles over political, social, economic, and geographic space.

While many researchers call for a multi-scalar approach to research, the question remains as to whether scale should be conceived in a traditional hierarchical fashion of spatial containers or be viewed as socially constructed and subject to socio-spatial reconfiguration. Recent debates in political geography, however, have come to some consensus: scale is socially constructed and consequently historically contingent; it can be politically contested; and it is essential to understand a plethora of political, sociocultural, economic, and environmental phenomena (Marston, 2000; Smith, 1990, Jonas, 1994; Sheppard and McMaster, 2004).

Scale and level are used interchangeably as units of analysis in most research. There is however, a distinction between scale and level. Gibson et al. (2000: 218, 219) point out that scale is “the temporal, spatial, quantitative or analytical dimension used to measure or study a phenomenon” while levels are “units of analysis located on different positions of a given scale”. Similarly, Sayre (2005) refers to the singular use of politics of scale as referring to level, i.e. local, regional, national, etc., while the plural sense is politics wherein relations between levels are prevalent, and scale is relevant. Smith (1995) stresses that scale “can be both fluid and fixed, both materially and conceptually”, while level are fixed.

Scale is conceptualized as both fluid and fixed. Since scales are socially produced through political struggle, and political contestation is an ongoing process, scales and scalar arrangements are fluid and processual (Brown and Purcell 2005). Swyngedouw (1997) pinpoints scale as fluid and contends that it is a mistake made by some geographers to conceive scale as fixed and given. He

emphasizes the fluidity of scalar arrangements and the degree to which they are in historical motion. The assumption that scale is fixed and given has resulted in some geographers treating scale as a latent object rather than an active object of inquiry. A major shortcoming to this is that it may forestall geographers' recognition of the continual reorganization of scale. The transformation of European states to a supranational entity – the European Union– exemplifies the reorganization of scale. The continued geographic expansion of the European Union (EU) thus shows the continual reorganization of scale. It should be noted however that the fluidity of scale is not in totality. Scalar arrangements can be fixed due to relatively hegemonic structures over a certain time frame (Brenner 2001). Hegemony is a function of political power. For instance, the role of the Sierra Leonean state in controlling mining and export of diamonds is a case in point. The creation and implementation of the Kimberley Process Certification Scheme has resulted in global governance of diamond trading thus curtailing national authority (Zulu and Wilson, 2009).

Scale can be perceived as the outcome and spatial strategy utilized by social actors to meet their political aspiration. Scale is therefore positioned at the epicenter of politics, thus the phrase 'politics of scale' (Swyngedouw, 1997). Scalar politics is evident when "actors, directly or indirectly, attempt to shift the levels of study, assessment, deliberation and decision-making authority to the level and scale which most suits them...where they can exercise power more effectively" (Lebel et al., 2008: 129). Politics of scale imply that "geographical scales and scalar configurations are socially produced and politically contested

through human social struggle” (Brenner 2001: 604). The epicenter of the politics of scale is the manipulation of relations of power and authority by actors and institutions that operate and are situated at different spatial scales. It is a highly contestable process and it involves myriad negotiations and struggles between various social actors as they try to reconfigure the spatiality of power and authority (Leitner, 1997, 2004). Most struggles are centered on the appropriation and control of natural resources. Socio-spatial processes therefore change the relevance and role of certain geographic scales, strengthen the significance of others and occasionally create new scales (Swyngedouw, 1997). Scale re-definitions therefore alter the geometry of social power and control, empowering some actors while dis-empowering others. The Kimberley Process Certification Scheme, a global regulatory mechanism for ‘conflict diamonds’ is a case in point.³⁰ It has reduced the power of the national state in diamond regulation (Grant and Taylor, 2005).

However, scalar outcomes do not always reflect the interests of the powerful. Scale can have a liberatory zest and symbolize spaces of resistance where marginalized groups can use scale as a political strategy to evade and challenge extant social, economic, and entrenched scalar structure. This manipulation of scales is what Smith (1993) refers to as ‘jumping scale’.

The idea of jumping scales elucidates the significance of levels in scalar discussions. ‘Jumping scale’ refers to situations in which some social actor (group of people, a firm, or a government body) shifts the level at which some process

³⁰ The United Nations defines conflict diamonds as diamonds that originate from areas controlled by forces or factions opposed to legitimate and internationally recognized governments, and are used to fund military action in opposition to those governments, or in contravention to the decisions of the Security Council.

(decision-making, enforcement, production or distribution of some valued good) occurs so as to secure a desired outcome. It follows the presumption of an extant structure of social organization, with functional and mostly hierarchical relationships among its constituent parts or levels. Actors that are disadvantaged at one scale can pursue their goals at a different scale, with the intent of transforming the balance of power in their favor (Zulu, 2009). Normally marginalized groups jump scales because they do not gain from existing scalar arrangements. For instance, diamond diggers may opt out of an exploitative mining system in which they work for an investor (locally known as supporter), and receive very little reward. By mining independently diamond diggers have jumped scale. Certain groups benefit while others lose. While the net of these gains and losses matters, who gains and losses, how and with what social, ecological, and economic impacts may matter more in terms of the outcomes of scalar politics.

Scale is also relational as scaled spaces exist in association with other scaled spaces, and scalar analysis in essence is a function of interactions and changing relationships across scales or levels (Brenner, 2001; Marston, 2000). For instance, the national scale is embedded within the global scale, while the global scale constitutes various national scales. Therefore, in analyzing scale it is essential to analyze the relationship among scales and the changing interrelationships among the various scales (Bremer, 2001). The relational co-existence of multiple levels on a scale is of importance to this study because each level in diamond mining and trading embodies “differences in powers and

capacities, opportunities and constraints...for practices of individual and collective agents” (Leitner and Miller, 2007:119).

In summary, analysis of scale must examine how the linkages among scales are continually socially produced, disintegrated, and re-produced through political struggle. It should thus assess which political interests (e.g. government mines officials) pursue particular scalar arrangements (e.g. national control of industrial mining) and should examine the motives of those political interests because they help to explain scalar outcomes. Theorizing the politics of scale therefore involves recognizing the dialectical association between structure and agency as manifested in disparate sphere of society (Leitner, 2004).

2.6 The Resource Curse: A Review

2.6.1 Political and Economic Explanations of the Resource Curse

Initially, scholarly works on the resource curse focused on economic explanations with emphasis on poor economic growth (Sachs and Warner, 2001; Mikesell, 1997). Through quantitative analysis and econometric models, studies found that economic performance of mineral-dependent countries in most developing countries fell. The World Bank (2002) documents that in developing countries that are heavily dependent on mineral exports (15-50 percent of export) economic growth fell at an average rate of 1.1 percent in the 1990s. It is essential to note that while poor economic performance can result in the resource curse, it is not necessarily the case as there are a few cases in which countries that perform

well economically have elements of the resource curse³¹. Perhaps, the absence of distributive equity and political stability are more significant aspects of the resource curse.

Political explanations and the role of institutions are also discussed as explanations of the resource curse (Bannon and Collier, 2003; Basedu, 2005; Bulte et al., 2004; Le Billon, 2005; Mehlum et al., 2006; Omeje, 2008; Robinson et al., 2006). Poor governance in mineral-dependent developing countries can contribute to a resource endowment being more of a curse than a blessing. Le Billon (2005) asserts that weak institutions of governance, corruption, authoritarian rule, and nascent democracies have resulted in a paradox of plenty. Bannon and Collier (2003) note that governments may lack accounting capabilities to manage high inflows of rents from natural resources (oil, gas, precious minerals). This creates an opportunity to siphon part of the rent for personal use. Transactions between governments and natural resource extractive companies are normally opaque and they are worse in less developed countries. This also creates an opportunity for government functionaries to either siphon government revenue or receive kickbacks (Reno, 2003; Cilliers and Dietrich, 2000; Brannon and Collier, 2003; Watts, 2004). The situation is more prevalent in authoritarian regimes or in countries that have nascent democracies, and institutions like civil society, the judiciary and other arms that can constrain the unscrupulous activities of government are not in place (Le Billon, 2005; Reno, 2003; Watts, 2004). While it is true that the resource curse, with few notable

³¹ The Federal Republic of Nigeria generates substantial amounts of oil revenue, yet the majority of its population lives in poverty. The situation is more serious in the oil producing Delta region where conflicts, poverty and environmental degradation are manifested.

exceptions, is prevalent in mineral-dependent developing countries, the political and social climate in a number of oil/mineral dependent countries in Sub-Saharan Africa (SSA) has created conditions through which the resource curse is manifested in numerous ways.

A number of studies have addressed the politics of petro-violence in Nigeria (Engel, 2005; Ukiwo, 2008; Watts, 2004). In examining the resource curse in Nigeria, Salai-Martin and Subramanian (2003) maintain that waste and corruption from oil are primarily responsible for the poor long-run economic performance in Nigeria. However, this study did not address the scalar dynamics of oil exploitation, the ecological impact of oil drilling and its effect at local level. Watts (2004) examines violence in Nigeria's Delta region by identifying three different forms of governable space and rule (the chieftainship, the ethnic minority, and the nation state) associated with oil-based capitalism. He notes that while governable spaces have forms of rule; identity and territoriality are not necessarily fully governable and may not be compatible, but rather work against one another in complex and contradictory ways. He underscores the simultaneity of different scale politics as a product of the oil-complex and petro-capitalism. Relatedly, Watts (2008) maintains that oil insurgency and petro-belligerence in Nigeria are a function of five different issues. First, there is an oil complex that is overtly territorial and is operational with a geographic logic of oil concessions. Second, activities of companies constitute a challenge to different forms of community authority, inter-ethnic relations and local state institutions. Third, this (corporate- community contestation) results in reconfigured governable spaces

many of which are mostly violent and unstable. Each governable space creates a dialectical tension within the interplay of territory, identity, and rule. Fourth, the overlapping and contradictory tenets of violent governable spaces manifest the complexity of oil rule. Oil has simultaneously held together the politically volatile multi-ethnic state while it has also pulled it apart. Lastly, the oil complex and its violent and unstable spaces resonate with the notion of accumulation by dispossession (Harvey, 2005).

The resource curse has also been examined from an economic perspective (Auty, 2004; Bannon and Collier, 2003). Bannon and Collier (2003) maintain that lack of economic diversification can undermine the national economy and could lead to very slow economic growth. This is evident in a number of SSA countries that are heavily reliant on one or two natural resources. Watts (2008) points out that Nigeria is highly reliant on its oil economy. He notes that in 2006, oil accounted for 80 percent of government revenue, 96 percent of export revenues and close to 50 percent of GDP. Global Witness (2002) indicates that 80 percent of Angola's government revenues is obtained from oil production. As a result of poor accountability of resource revenues, the government and its key actors receive illegal wealth from resource rents through diversion of public funds and kick backs from business negotiations. Angolan government authorities thus become reluctant to implement economic diversification policies.

2.6.2 The Spatial Geography of the Mineral Resource

Another dimension of the resource curse that is gaining momentum in scholarly debates is the political geography of the resource. The political

geography of the resource can determine the level of control government has on a natural resource (Le Billon, 2007). Le Billon (2005), and Auty (2001) note that accessibility of precious minerals (for instance diamonds) is dependent on the spatial spread of the resource (*diffused* or *point* resource), the distance away from central political control (*proximate* or *distant*), and the mode of exploitation. According to them, diffused resources such as alluvial diamonds are highly accessible to artisanal miners. This makes it difficult for governments to control and tax, and makes the resources a target for rebel movements. In contrast, point resources cover small areas and are often exploited by a few capital-intensive operators (Le Billon, 2005; Olsson, 2006). Oil, deep-shaft hard mineral exploitation and Kimberlite diamonds are examples of point resources. Point resources are more susceptible to secessionist movements especially in situations in which the local population are marginalized economically, socially, and ecologically.³² This study examines alluvial diamonds in Sierra Leone to ascertain the extent to which diffuseness and remote location from government control are responsible for its illicit exploitation.

Further, diffuse resources like alluvial diamonds are highly susceptible to illicit exploitation and smuggling and can be hard to put under fiscal control by governments (Cilliers and Dietrich, 2000; Dietrich, 2004; Le Billon, 2005). The ease of transferability, its high value per weight, and its store of wealth have facilitated its illegal exploitation. This has resulted in low government revenues and economic decline with attendant socio-economic ramifications. A large influx of miners in diamond locales, the presence of foreign diamond agents and

³² A case in point is the Niger delta in Nigeria's oil region.

porous borders have hindered efforts at controlling alluvial diamond mining in most places in Sub-Saharan Africa (Cilliers and Dietrich, 2000; Global Witness, 2004).³³ Illicit mining and smuggling through neighboring countries is a common phenomenon (Gberie, 2004). This reduces official revenues generated from diamond exploitation. However, the value of diamonds originated from these countries run into millions of dollars annually. Dietrich (2004) maintains that the regional diamond-trading platform and the opaque nature of the diamond industry facilitate illicit trade in diamonds. This can also create an atmosphere in which state power and legitimacy is challenged. He notes that countries in the Great Lakes region in Central Africa provide a platform for conflict diamonds originating in the Democratic Republic of Congo (DRC). Dietrich also mentioned a regional network in West Africa in which Liberia and a few other countries facilitated trade in conflict diamonds. The current study examines the issue of illicit diamonds as a dimension of the resource curse in Sierra Leone in general and Kono District in particular.

2.6.3 Socioeconomic Explanations of the Resource Curse

The structure of diamond extraction and trade is configured in a way that results in significant economic disparity between diggers and dealers (Olsson, 2006). A report by Global Witness (2004) states that average earnings of alluvial diamond diggers in SSA are about a dollar a day (abject poverty) while diamond

³³ Mine operators evade export tax if the taxes are raised and smuggle diamonds to neighboring countries with low export tax. A case in point is the smuggling of diamonds from DRC to Congo as the latter has a lower export tax. See Global Witness 2004.

dealers, and exporters take the lion's share of the income.³⁴ Davies (2002) asserts that abject poverty amongst the ordinary people may result in growing disenchantment, particularly if a few political and business magnates benefit immensely. The current research attempts to determine the degree of socio-economic disparity between diggers and dealers in the diamond industry in Sierra Leone as exemplified by Kono District.

2.6.4 Conflicts as Explanation of the Resource Curse

The relationship between oil/mineral resources and armed conflict has been given considerable currency in the resource curse debate (Bannon and Collier, 2003; Campbell, 2002; Collier, 2000; Davies, 2006; Le Billon, 2005; Olsson, 2006; Omeje, 2008; Reno, 2003; Ross, 2003; Silberfein, 2005). A central theme of these works is that precious natural resources, especially diamonds and oil, serve as economic attraction for belligerents who out of greed and/or grievance may decide to challenge the state to access, control and manage resources. It should be noted that while there are divergent views³⁵ as to whether precious minerals are primarily responsible for the cause of war, there is consensus amongst scholars that they played a dominant role in the protraction of violent conflicts in countries like Angola, DRC, Liberia, and Sierra Leone (Davies, 2006, Ross, 2004, Le Billon, 2005; Lujala, 2005).³⁶ A Global Witness report (2004) pinpoints alluvial diamonds as the fuel for Angola's civil war as

³⁴ The estimated number of diamond diggers in alluvial diamond mines in Africa is 1 million and the estimated annual revenue is 1 billion dollars. This implies that the average value by worker is \$1000, however, most studies showed that they receive an income of about \$1 a day.

³⁵ While authors like Hirsch 2001, Smillie et al. 2000 underscore diamonds as the cause of instability in Angola, DRC, and Sierra Leone, others like Davies 2002, Ross 2004 maintain that other factors precipitated civil wars.

³⁶ Greed is emphasized as the primary economic explanation of civil wars in particular and resource conflict in general (Collier and Hoeffler 2001).

the rebel group União Nacional pela Independência Total de Angola (UNITA) were in control of diamond areas from 1992 to 2003. It is estimated that five billion dollars worth of diamonds have been mined in Angola within that period, and over half of that was smuggled out (Global Witness, 2004).

Some scholars have explored the link between mineral resources and violent conflict in the Democratic Republic of Congo [DRC] (Global Witness, 2004; Johnson and Kayser, 2005). A common thread amongst these scholarly works is that the present mineral-based conflicts in east DRC in partly influenced by historical dynamics of mineral exploitation. Foreign companies have been attracted my lucrative mining concessions offered by the autocratic government of former President Mobutu Sese Seko and subsequent rebel groups. Most of the mineral rents, however, have been siphoned into private pockets.³⁷ In spite of its mineral endowment (which includes copper, cobalt, coltan, and diamonds) greed and grievance has resulted in conflict-ridden underdevelopment in DRC. Other scholars, including Gberie (2004); Smillie et al. (2000); Wilson (2006), and Zack-Williams (1998) have examined how the diamond trade was also used to destabilize West Africa. They noted that Charles Taylor, a warlord and then leader of the National Patriotic Front of Liberia (NPFL) served as an agent in the trading of arms for diamonds.

It is essential to note that most of these works focus on mineral/oil resources and civil wars. Very few works address community conflicts at the locale of extraction (Bebbington et al., 2008; Hilson, 2002; Ngoie and Omeje,

³⁷ It is estimated that President Mobutu's personal wealth was \$4 billion.

2008; Watts, 2008)³⁸. Bebbington et al. (2008) point out that the expansion of corporate mining in Peru and Ecuador has resulted in community protests as rural livelihoods of community groups have been adversely affected. They note that while conflicts can threaten corporate activities, pressure from social movements may lead to a more inclusive participation in decisions geared towards community development. Ngoie and Omeje (2008) explore low-intensity conflict over diamond and copper mining in Kasai and Kasanga regions in the DRC. They assert that the conflict is pivoted on the contestation between modernity (government's expansion of concession for corporate mining) and traditionalism (local people's continued use of land for small scale mining and agrarian and forest activities). Their research examines the political economic dynamics of such conflicts. This dissertation contributes to the literature on community conflicts in mining areas, but focuses instead on the sociospatial dynamics of such conflicts.

2.6.5 Environmental Explanation of the Resource Curse

Scholars have examined the environmental impacts of mining (Hilson, 2002; Naidoo-Vermaak, 2009; Zack-Williams, 1995). The environmental impacts of diamond mining include deforestation, land degradation, and soil erosion. Weak controls or regulation of diamond mining has wreaked environmental havoc throughout Africa and other parts of the world. Partnership Africa Canada (2004) notes that in Angola, ninety years of environmental neglect in mining areas have devastated large tracts of land, poisoned local water, forced

³⁸ Low-intensity community conflicts are those in which extreme violence is sporadic, as distinct from armed conflicts in which extreme violence result in at least 1,000 combatant deaths per annum.

indigenous populations to relocate, and removed their primary livelihood, agriculture (Partnership Africa Canada, 2004). Nyame and Danso (2006) pinpoint land degradation, loss of biodiversity, and pollution of rivers as the environmental consequences of diamond mining in Birim, Eastern Ghana. In a similar vein, Aryee et al. (2003) examine the environmental impact of precious mineral extraction in Ghana and highlight some major impacts. First, mineral extraction affect the lithosphere of which the primary impact is land degradation. This is more so in uncontrolled, unmonitored small-scale mining sites. Large tracts of agricultural land are also destroyed due to excessive vegetation removal and disruption of soil structure. Second, the drainage system is adversely affected by mining. Tailings may enter streams and rivers during heavy rains leading to sedimentation problems as streams become unusable for domestic and industrial purposes. While these studies highlight environmental impacts of mining, they did not explore the spatial pattern and extent of the environmental impacts of mining. This study assesses the spatial pattern and extent of environmental impacts of diamond mining focusing on land cover change, and its impacts on local livelihoods. It also explores respondents' perceptions of mining/farming induced environmental change and its local impacts.

2.7 Focus of Study: Social and Environmental Implications

Most of the aforementioned studies emphasize economic factors such as poor economic growth, lack of economic diversification, and political factors like weak governance and corruption as explanations of the resource curse, yet social and external factors have not been given sufficient consideration. The role of

social phenomena needs to be comprehensively addressed since contextual and historical social patterns do shape the functioning of state institutions and the (mis) management of oil/mineral resources (Rosser 2006). This dissertation aims at examining how the interactions of social actors in diamond exploitation at multiple scales do influence socio-environmental outcomes.

2.8 Diamonds and the Resource Curse in Sierra Leone

Some works posit that politicization of Sierra Leone's diamond industry has worsened government's capacity to regulate the diamond industry (Davies, 2002; Reno, 1995; Schwartz, 2006). Some studies have examined how former president Stevens implemented the patrimonial system of governance in Sierra Leone (Davies, 2002; Kabia, 2008; Reno, 1995, 2003; Zack-Williams, 1998). They maintain that the use of the diamond industry as compensation mechanism for party loyalists marginalized most local people and opposition members, and was the root cause of political and economic collapse. Davies (2006) asserts that the politicization of diamond exploitation during Stevens' era undermined the state and accelerated informal mining.

Gberie (2004); Levin (2006); Reno (2003); and Zack-Williams (1995) have examined informal and illicit diamond trading in Sierra Leone. They pinpoint that a striking feature of Sierra Leone is the degree to which top politicians and businessmen pursue personal wealth and political power through informal markets. Gberie (2004) and Reno (2003) note that the informal and

illicit diamond trade mainly controlled by foreigners and a few local elites³⁹ resulted in a precipitous decline in official earnings from diamond exports and increasingly high unemployment. This study examines why and how illicit diamond mining and smuggling of diamonds is prevalent in Sierra Leone focusing on Kono District. It questions the effectiveness of the Kimberley Process in combating illegal trade of Sierra Leone diamonds.

Few works have examined the links between diamond exploitation and local livelihoods (e.g. Global Witness, 2004; Levin, 2006, USAID, 2005). A notable exception is Levin (2006) who uses the sustainable livelihoods approach to examine diamond mining and governance in Kono District.⁴⁰ Levin's study shows the sharp economic disparity between the diggers on one hand and the dealers and exporters on the other hand in alluvial diamond mining. Findings of Levin's study suggest an integrated livelihood approach for analyzing sustainable livelihoods in Kono so as to demonstrate how the various natural and human capital endowments can enhance sustainable livelihoods⁴¹. This research builds on Levin's work, but adds how the environmental impacts and social dynamics of diamond mining affect local livelihoods.

A number of scholars have examined how unregulated diamond mining in Sierra Leone has fuelled conflicts, culminating in civil war from 1991 to 2002 (Campbell, 2002; Fithen, 1999; Hirsch, 2001; Olsson, 2006; Reno, 2003;

³⁹ Illicit mining and smuggling occurs in collusion between local business elites, traditional authorities, and foreign businessmen many of them of Lebanese descent. See Reno (1995, 2003).

⁴⁰ Sustainable rural livelihoods enhance the assets and capabilities of rural dwellers while maintaining the natural resource base. See Ellis 2000, *Rural Livelihood and Diversity in Developing Countries*.

⁴¹ An integrated local livelihood may consist of a myriad of resources that households utilize in the production of their livelihoods. See Bury (2005).

Richards, 1996; Ross, 2004; Silberfein, 2005; Smillie et al., 2000;). Smillie et al. (2000), Hirsch (2001), among others maintain that access to and control of diamonds was a major causative factor for the civil war and its protraction. Others like Fithen (1999); Kabia (2008); Olsson (2006); and Ross (2004) contend that diamonds were not a primary causative factor of Sierra Leone's civil war but they contributed immensely to its protraction as proceeds from diamonds provided finances for belligerents (especially the rebel Revolutionary United Front –RUF).

While extensive work has been done on diamonds and armed conflict in Sierra Leone, not much attention has been given to contemporary local conflicts (Jenkins-Johnston Commission Report, 2008; NMJD, 2006; 2008). According to NMJD (2006) there are conflicts between diamond mining companies and communities, and mining communities and local authorities. It is important to understand the social dynamics of these conflicts so as to mitigate the problem, thus preventing further escalation to national scale. The current study gives an overview of the diamond-civil war debate while discussing the historical evolution of diamond exploitation in Sierra Leone. Its primary focus though is to examine contemporary local conflicts driven by diamond mining in Kono District.

In addition to social problems, mineral exploitation in Sierra Leone has been shown to result in environmental impacts, including deforestation and land degradation (Akiwumi, 2006; PAC, 2006; NACE, 2009; Schwartz, 2006; Zack- Williams, 1995). For purposes of this study, environmental degradation refers to environmental and natural resource deterioration that result in substantial decrease in biological productivity and are

triggered by anthropogenic activities. The study focuses on land cover change degradation, especially deforestation. Akiwumi (2006) examined environmental impacts of rutile mining in South Western Sierra Leone and observed that large areas have been devastated due to mining. She noted that artificial lakes have been created and massive deforestation has occurred. Schwartz (2006), and Partnership Africa Canada (2005) have described environmental degradation associated with diamond mining. They noted that non-implementation of mining policies contributed to environmental degradation. While both Kimberlite and alluvial diamond mining have contributed to environmental degradation; the latter is significantly more damaging as its deposits are spatially dispersed and surficial (Gbekie, 2003; Sesay, 2002)⁴².

Gbekie (2003) and Sesay (2002) did empirical studies on environmental impact of diamond mining in Kono and Kenema districts respectively. Though these works identified environmental problems, they did not examine them from a spatial change perspective. This study adopts a spatially explicit approach to land cover change in mining areas in Kono district based on the analysis of remotely sensed images. Such analysis has been shown to provide useful information that can aid natural resource and environmental management.⁴³ It also explores other aspects of environmental degradation.

Diamond mining communities are not only marginalized economically, socially, and politically but also appear to bear the environmental costs of

⁴² Artisanal miners, some of whom are illicit miners devastate the environment as they lack geological knowledge of diamond deposit locations, thus they engage in 'trial by error' mining.

⁴³ Determination of the spatial extent and pattern of land cover change can guide land rehabilitation measures.

diamond extraction.⁴⁴ Diamond mining can have a debilitating effect on land-based resources (e.g. soils, water and trees), thus minimizing local livelihood options. This dissertation therefore aims at contributing to the resource curse literature from a social as well as ecological standpoint by examining the spatial and temporal dynamics of environmental change along with the traditional political economic dynamics as summarized in Figure 2.1.

Figure 2.1 illustrates how political and economic factors at the national and international levels influence the socio-spatial dynamics surrounding diamond exploitation at the local level, national, and global levels and the socio-ecological impacts especially at the local and national levels. It shows how market forces and governance issues at multiple scales intersect with socio-political dynamics and the spatiality of the resource and the socio, economic, political, and environmental ramifications and how they affect local livelihoods in Kono District.

⁴⁴ Communities suffer from land rights violation by authorities, inadequate compensation if any, and have to cope with degraded land-based resources.

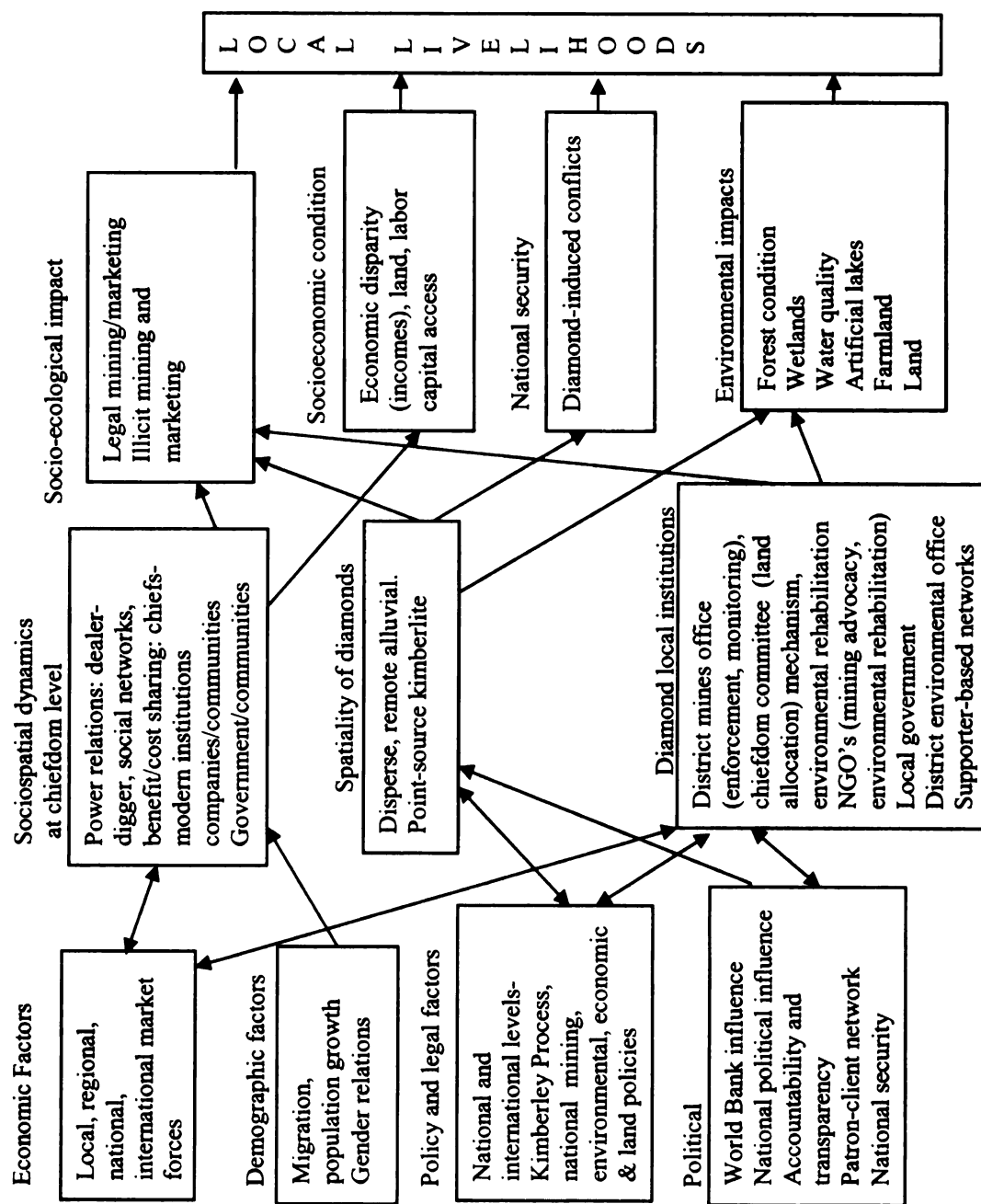


Figure 2.1 Schematic conceptual model: socio-environmental ramifications

2.9 Conclusion

In this chapter, I have examined the political economy framework that has been adopted to appraise the problem of the resource curse. It emphasizes political institutions, rules, and political actions and their socio-economic outcomes. The role of the state and global capital are key aspects of analysis. Further, I have justified why the dissertation has adopted a more encompassing approach, political ecology, in interrogating socio-environmental ramifications of the resource curse. Political ecology brings out the essence of political and economic power and how they influence resource access, control and utilization across temporal and spatial scales. By specifically adopting an actor-oriented political ecology focus, the power relations amongst various social actors engaged in diamond exploitation are examined in order to evaluate the extent and socio-environmental outcomes of the resource curse. The actor-oriented approach implicitly allows for consideration of the politics of scale theory in explaining spatialized power relations. The actor-oriented approach allows the actors to be followed thereby reducing the possibility of privileging a particular scale, thus avoiding the local trap⁴⁵. Thus, actor-oriented political ecology examines the socio-spatial dynamics of the power relations surrounding the exploitation of diamonds.

⁴⁵ Local trap refers to cases in which political ecologists privilege local scale of analysis with the belief that they would have desired social and ecological outcomes than activities at other scales.

I also reviewed the literature on the resource curse with particular reference to SSA and Sierra Leone is reviewed from the political, economic, social, and environmental perspectives. Political and economic conditions seem to be the primary contributors to the resource curse with social and environmental ramifications.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

Methods used in this study include social survey and remote sensing analysis. These were employed in order to achieve the objectives and test the hypotheses stated in Chapter 1. Social survey analyses involved structured household interviews, in-depth key informant interviews, focus groups, secondary data, and archival research to investigate the social, political, economic and environmental dimensions of diamond exploitation in Sierra Leone with specific reference to Kono District. In addition, the study utilized remote sensing analysis as proxy for landscape level analysis. It was used to determine the spatial pattern and extent of land cover change which was compared to local perceptions of environmental change. In this chapter a detailed explanation and justification of research methods is presented, including data collection methods and data analysis techniques.

To address the first hypothesis, *introduction and maintenance of patrimonial politics and growing informalization of diamond exploitation in Sierra Leone have historically reduced the positive role of diamonds in national and local economic development largely into a resource curse*. I used archival data, secondary data, oral history accounts and semi-structured and informal interviews. Materials from these sources enabled a comprehensive analysis of the declining role of diamonds to the country's socioeconomic development.

In order to address the second hypothesis, *diverse social actors at local, national and international scales have taken advantage of the weak regulatory*

state apparatus in Sierra Leone to exploit diamonds in ways that turned a rich endowment of a rare, portable, precious mineral more into a curse than a blessing, I used a combination of structured household interviews, semi-structured interviews, focus groups, and archival data. These multiple sources corroborated in giving a more robust explanation of the extent of the resource curse. While responses from household interviews focused primarily on the extent of government's capacity to monitor mines and patron-client relations in diamond exploitation, key informants interviews and focus groups discussions provided more detailed reasons about the characteristics of state capacity.

To address hypothesis three, *geographically diffuse and remotely-located, highly valuable natural resources are more a liability than an asset*, household responses to issues related to illicit mining and trading, key informants' perception of government regulation and illicit exploitation, and secondary data were utilized. Existing maps of known deposits were also used to determine the spatial spread of diamonds. Alluvial diamonds that are widely dispersed have heightened illicit mining and smuggling thus contributing to the resource curse.

In order to prove that *environmental conditions in diamond chiefdoms are worse than in non-diamond chiefdoms* (hypothesis 4), responses from households in the diamond and non-diamond areas related to environmental conditions were analyzed. This was supplemented by key-informant interviews and focus groups in diamond and non-diamond regions. With regards to the environmental conditions analysis of remotely sensed satellite images provided insights into the spatial and temporal pattern of land cover change by comparing diamond and non

diamond areas, in the pre-war (1986 to 1991), war (1991 to 2002), and post war periods (2002-2007). This was used in concert with responses from household surveys, key informants interviews and focus groups to the environmental change schedule.

3.2 Social Analysis of Diamonds as a Resource Curse

3.2.1 Sample Frame and Sample Size

Understanding the sociospatial context of social actors and diamond exploitation is important to unravel the socio-environmental ramifications of diamond mining. Data were collected on social, economic, political, institutional, scalar, and environmental factors to examine the extent to which diamonds constituted a resource curse. The main methods used were a household questionnaire survey, key informant interviews, focus groups, observation, and secondary data.

A stratified random and systematic sampling procedure was used for household interviews (Alreck and Settle, 2004). First, the household population of Kono District was stratified into diamond and non-diamond producing areas at the scale of the chiefdom. Diamond producing areas are those communities in which the principal economic activity were diamonds though there were secondary economic activities while non-diamond producing areas did not necessarily have direct involvement in diamond production. Second, four chiefdoms from the diamond-mining areas and two from the non-diamond mining areas were randomly selected. Third, two towns/villages from each of the selected chiefdoms were randomly selected, totaling eight from the diamond mining chiefdoms, and four from the non-diamond chiefdoms; hence, twelve towns/villages in

total. Thirty households were selected in each town/village through a systematic sampling. Every sixth household was systematically selected along representative and clear transects across each town/village. Of the 360 households interviewed, 240 were from diamond mining chiefdoms and 120 from non- diamond mining (agricultural) chiefdoms. In his study of the social and environmental impacts of mining in Geita District, Tanzania Kitula (2006) used a sample size of 148 to compare mining and non-mining communities from a population covering seven administrative sections and a population of 712,195. Selection of chiefdoms through stratified sampling ensured spatial representation of the population while random sampling of household served as a protection against biased representation of the population.

3.2.2 Structured Household Interviews

Structured interview instruments were administered by questionnaire to household heads. An adult household member was interviewed in a few cases in which the household head was unavailable. On the whole, 97.1 percent of household respondents were males while 2.9 percent were females. The mean age of respondents was 35 while their ages ranged from 20 to 76. The questionnaire was in Krio, the *lingua franca* of Sierra Leone (99.9% of Sierra Leoneans understand and speak Krio). The average time for household interviews was 50 minutes. Prior to pilot surveys, the author organized a three day workshop during which research assistants (three) were given thorough insight about the questionnaire, the level of details required, and the intent of the survey. Mock sessions were held during the second and third days to ensure that they were

abreast with the survey.⁴⁶ The questionnaire schedule was pre-tested in four towns/villages by the author and research assistants and was modified accordingly. The survey instrument was organized into six main sections: (1) demographic and livelihood information; (2) illicit diamond mining and marketing; (3) socio-economic disparity; (4) conflicts over natural resources; (5) environmental degradation; and (6) livelihood and household gender relations (see Appendix 1). An ordinary 1-5 or 1-3 likert scale was used to record responses to questions involving ordinal rating. For open-ended questions, interviewees' personal impressions were noted in the questionnaire. Questions asked included the causes of illegal mining and smuggling, temporal and spatial aspects of illegal mining and measures by which legal diamond exploitation can be enhanced. Questions asked included the following: Is illicit mining in Kono greater in remote places than in places close to cities and towns? Does the spatial dispersal of diamonds result in increasing illicit mining? Over the past 5 years, how would you characterize the trend in illicit diamond mining? These questions were designed to gather information about the spatial geography of diamonds. A number of questions were asked in relation to the weak state apparatus. They included: how do you rate the effectiveness of local mining rules in your community? How do you rate the effective of national mining rules in your community? Which of these is the major cause of illicit trade in diamonds?

3.2.3 Key Informant Interviews

Semi-structured interviews of key informants were designed to further develop issues related to diamond mining regulations, scalar linkages and politics,

⁴⁶ These research assistants had considerable experience in social surveys in the Eastern Province.

diamond mining conflicts, environmental conditions in mining/non-mining areas, context, town/village history, and to validate information obtained from other methods or sources. The author interviewed selected town/village (henceforth referred to as town), state and non-state actors at different scales. These included three paramount chiefs (chiefdom heads), eight town/section chiefs, religious leaders, teachers, elderly persons, and farmers. Government mining officials, diamond dealers, license holders, diamond mining supporters, company workers, district council officials, and mining-related NGO officials were also interviewed. Interviews provided an ample account of government regulatory mechanisms for diamond mining, their strengths and weaknesses, the effectiveness of mining and environmental policies, power relations amongst the various actors and their impact, oral historical accounts of diamond exploitation, agricultural and food security trends, and forest use in mining/non mining communities.

3.2.4 Focus Group Discussions

Focus groups were useful as they amplified some themes indicated by household respondents. Focus groups helped to capture community interests and the sociospatial dynamics of diamond exploitation with the benefit of group discussion and consensus (Alreck and Settle, 2004). Focus groups included six digger/miner groups, two youth groups, and two women's groups. The focus was on sociopolitical dynamics of diamond exploitation from the viewpoint of groups considered marginalized by the literature (c.f. Global Witness, 2004; Levin, 2006). Information collected was centered on perceptions of illicit diamond mining and marketing, trends in diamond mining, the impacts of mining on

livelihoods at household and community levels, the strengths and weaknesses of government regulation practices, socio-economic conditions of miners and farmers, land use conflicts, trends in land use/land cover, major environmental problems, and gender dynamics of environmental change.

3.2.5 Personal Observation and Secondary Data Sources

During the duration of fieldwork, the author kept a field diary and noted daily observations and impressions from the field, which provided a salient source of perspective on the study. The author visited a number of mining operations in various mining chiefdoms and observed that there were several small pits covering extensive areas. This was particularly so in remote areas where illicit mining was common. Further, secondary information on the broader political economy of diamond exploitation, historical aspects of diamond exploitation, mining and forestry policies, environmental impacts of diamond mining, conflict diamonds, international diamond regulatory mechanisms, and international diamond actors was collected from various documents in the form of ministry of mineral resources reports, policy papers, projects, diamond extraction research records, the World Bank, donors and international NGO reports, conference and workshop proceedings, and formal correspondence. Archival research of Ministry of Mineral Resources and other government documents was conducted in the National Archives of Sierra Leone, Sierra Leone Library Board, and the University Library at Fourah Bay College. The author also attended a one-day workshop in Koidu Kono on community initiatives on the identification and mitigation of social and environmental impacts of large-scale diamond mining in

Sierra Leone in January 2007. This broadened the researcher's horizon on issues related to the socio-environmental ramifications of diamond exploitation in Sierra Leone.

3.3 Land Cover Change Analysis

3.3.1 Remote Sensing Based Analysis of Land Cover Change 1986 to 2007

In an attempt to prove or disprove the environmental dimensions of the resource curse in a spatially explicit manner, the author compared perceptions of interviewees with empirical land cover change analysis based on remotely sensed Landsat Thematic Mapper (TM) satellite data between 1986 and 2007. The year 1986 was used as a baseline because change of leadership that called for the enforcement of mining regulation occurred in Sierra Leone.⁴⁷ The civil war started in 1991 and ended in 2002. During this period rebellious groups especially the RUF controlled diamonds. In 2002, diamond mining came under central government control. The dates of the Landsat images were chosen in order to examine land cover change in different diamond management regimes: (1) from the onset of stricter regulation (1986) to the rebel incursion of Kono, in 1991; (2) from 1991 to the end of the war and subsequent resumption of official mining in 2002; and (3) from the resumption of official mining in 2002 to 2007 when a new government was elected. Changes detected in pattern and rates of land use/land cover change helped to demonstrate the environmental dimension of the resource curse (Agyemang et al., 2007; Akiwumi and Butler, 2007; Kusimi, 2008).

⁴⁷ A new dispensation called New Order was introduced by President Momoh who succeeded President Stevens in 1986.

3.3.2 Methodology for Land Cover/Use Change

Radiometrically corrected Landsat images for 1986, 1991, 2002, and 2007 (two scenes per year) obtained from USGS Earth Explorer were used for the land cover change detection analysis. Table 3.1 shows the type and dates of the images used. Images selected were those covering the period January to April (mid-dry season) so as to increase the chances of cloud-free images and for clear distinction between trees and other vegetation. Actual year and acquisition dates selected for the analysis were partly determined by available image that were relatively cloud cover free. Cloud cover on all but one of the images was 0%. One of the 1991 images had a cloud cover of 10 %. However, the study area was outside the cloud prone region of the image. The spatial extent of a Landsat image is 185 by 185 kilometer, and the spatial resolution of the images was 30 meter.

Table 3.1 Satellite images for land cover change

Image type & year	Date	Path and Row
TM 1986	1/21	p200r54
TM 1986	1/12	p201r54
TM 1991	1/24	p200r54
TM 1991	2/2	p201r54
ETM+ 2002	2/25	p200r54
ETM+2002	1/16	p201r54
TM 2007	3/20	p200r54
TM2007	4/12	P201r54

3.3.2.1 Image Pre-processing

Data analysis includes converting the images from Tiff file format to Erdas imagine image format and subsequently stacking the non thermal bands (1-5 and 7). Next the images were corrected by image-to-map rectification and image to image registration using bilinear interpolation resampling algorithm (Jensen, 2005). The 1986 image was

rectified using a topographic map of the district while the subsequent images were registered to the corrected 1986 image. Each of the scenes within the same path and row were overlaid to verify that the geometric correction was accurate. The total root mean square (RMS) error was less than 0.1 for all the geometrically corrected images. For each of the geometric correction, more than 20 ground control points were used.

The next stage of image preprocessing was the correction of each of the images for atmospheric interference. Dark object subtraction method was used in atmospheric correction (Lu et al., 2002). Atmospheric correction was done in two steps. The first step involves conversion of the raw satellite image to apparent at-sensor radiance followed by conversion to surface reflectance. Conversion of the raw satellite image (Landsat digital number) to at-sensor radiance was executed as follows: Equation (1) was used for images where maximum and minimum radiance values were included in the image header file, while equation (2) was used where gain and offset information was included in the header file (Chander et al, 2009).

$$L_{\lambda} = \left(\frac{LMAX_{\lambda} - LMIN_{\lambda}}{Q_{cal\ max} - Q_{cal\ min}} \right) (Q_{cal} - Q_{cal\ min}) + LMIN_{\lambda}$$

Equation (1)

$$L_{\lambda} = G_{rescale} \times Q_{cal} + B_{rescale}$$

Equation (2)

Where

L_{λ} = At-sensor spectral radiance in $[W/(m^2\ sr\ \mu m)]$

Q_{cal} = Landsat image pixel value (digital number DN)

Q_{calmin} = Minimum quantized calibrated pixel value corresponding to $LMIN_{\lambda}$

Q_{calmax} = Maximum quantized calibrated pixel value corresponding to $LMAX_{\lambda}$

$L_{MIN\lambda}$ = Spectral –at sensor radiance that is scaled to Q_{calmin} [$W/(m^2 sr \mu m)$]
 $L_{MAX\lambda}$ = Spectral –at sensor radiance that is scaled to Q_{calmax} [$W/(m^2 sr \mu m)$]
 $G_{rescale}$ = Band-specific rescaling gain factor [$W/(m^2 sr \mu m)$]
 $B_{rescale}$ = Band-specific rescaling bias factor [$W/(m^2 sr \mu m)$]

In the second stage of correcting for atmospheric interference, the at-sensor spectral radiance images were converted to surface reflectance images using dark object subtraction method (Lu et al., 2002). The equation used in dark-object subtraction is as follows:

$$R_{\lambda} = \prod * D^2 * (L_{\lambda} - L_{\lambda haze}) / (Esun_{\lambda} * \cos \theta_s)$$

Equation (3)

Where

R_{λ} = Surface reflectance.
 \prod = Mathematical constant equal to 3.14159 [unitless].
 D = Distance between Earth and sun [astronomical units].
 L_{λ} = At-sensor spectral radiance.
 $L_{\lambda haze}$ = path radiance.
 $Esun_{\lambda}$ = Mean atmospheric spectral irradiance [$W/(m^2 \mu m)$]
 θ_s = sun zenith angle (or 90- sun elevation angle).

Following atmospheric correction, each of the bands in the 8 scenes were stacked and mosaicked. The images were successfully mosaicked by the area of interest region around each scene. Histogram matching algorithm using band by band method was used to mosaic the images (Erdas, 2003).

The study area was subsetting from the mosaicked image by deriving an area of interest (AOI) file from a shape file of the study area. The AOI file of the study area was used to subset the study area from each of the mosaicked images for the four time periods under investigation.

Image statistical analysis was conducted to locate those bands in the images that highly correlate with each other in order to prevent the problem of data redundancy (Jensen, 2005). In the 1986, 2002 and 2007 images, band 2 was removed from the rest of the bands in the images during classification as it highly correlated with band 3.

3.3.2.2 Image Classification and Accuracy Assessment

A hard classification approach was used in classifying the images with the aid of a hybrid classification procedure. Firstly, an unsupervised classification using ISODATA algorithm was conducted to guide in the selection of unique signatures from the images. Additional signatures were manually collected and merged with those obtained by the unsupervised classification. A supervised classification using maximum likelihood classifier was conducted. The final land cover classes derived from image classification include grass, agricultural, forest, water, settlement and bare ground.

To conduct accuracy assessment of classification, a total of 330 points was selected by stratified random sampling technique wherein each land cover class had a minimum of 50 reference points. As a result of the lack of aerial photographs for all the time period of the study, a topographic land cover map of 1986 was used as a reference for the 1986 classification. High resolution aerial photograph of the study area was used to assess classification accuracy for subsequent years. The tables in Appendix 2 summarize the classification accuracy for the four study periods.

The 1986 image had the highest classification (86.67%); this was followed by 2002 and 2007; while 1991 had the lowest accuracy (84.55%). The very low classification accuracy of the 1991 image can be attributed to the relatively low quality of the image compared to the others. For individual classes, water had the highest

producers' accuracy for all the classified images. Lowest producers' accuracy was recorded for bare ground and grass. Highest users' accuracy was recorded for grass while urban/settlement recorded the lowest users' accuracy.

3.3.2.3 Image Change Detection

Change detection was conducted to show how forest cover changes over the 21 year study period. This was done by developing a model in Erdas Spatial Modeler that shows the types of land uses that forest changed to between 1986 and 2007. The model was executed in two stages. In the first stage, an 'If then' conditional expression was written to show only forest areas in 1986 while all other land covers were masked out. Similarly, four 'if then' conditional expressions were written to show grass, agriculture, water, urban/ built-up areas and bare ground respectively in 2007. The above gave two temporary images for 1986 and 2007. To obtain lands that changed from forest to other land uses in 2007, a 'bit-wise' expression was written using the temporary images as variables. The model produced four binary images of forest cover change to grass, agriculture, urban/ built-up areas and bare ground. These images were overlaid in ArcGIS 9.3 to produce the change detection map (See Chapter 6). These outputs have contributed to amplify respondents' perception of the environmental dimension of the resource curse in Kono District. Figure 3.1 is a flowchart showing the various operations employed in change detection.

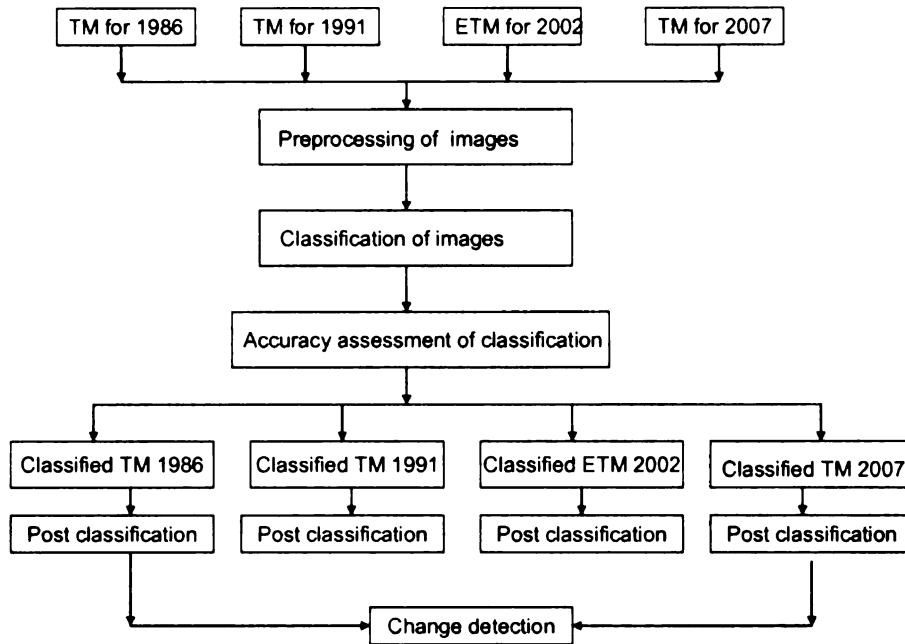


Figure 3.1 Land use/land cover change detection flow chart

3.3.2.4 Comparison of Forest Cover Spatial Extent to other Land Uses

The proportion of forest cover in the classified images was compared to non forest land uses during the four time periods of study. This was executed by creating a shape file for the six diamondiferous regions. Next, the shape file was converted to Erdas imagine area of interest (AOI) file; the latter was used to subset the classified images thus extracting the diamond regions. After this process, the spatial extent of all the other land uses was summed exclusive of the forest cover. The proportion of forest to other land uses was expressed in percentage (See Chapter 6).

To extract the agricultural regions from the classified image, a simple model in Erdas imagine spatial modeler was developed. This model subtracted the diamond regions from the classified image producing the agricultural region. The percentage of

forested vis-à-vis non-forested regions within the agricultural region was then calculated (see Chapter 6).

3.4 Analysis of Social Survey Data

Common themes that resonated in study objectives and direct overall analysis were power relations, socio-spatial relations, context, and scale. Qualitative content of semi-structural interviewee' responses were summarized into themes and outstanding ideas and quotes were pinpointed to explain findings. Simple descriptive statistics (which included percent counts, mean, and mode) were utilized to summarize survey data. Chi-Square tests were used to test statistical association in qualitative responses between demographic, social, and economic, and household characteristics to diamond mining, farming, and forest use.

Frequency responses provided a measure of strength of the level of the various categories of responses with reference to types of economic activities, income obtained from diamonds, income obtained from other economic activities. Estimates of diggers/miners' income from diamonds were based on the monetary value of daily mining support during annual mining period(s), amount obtained from diamond sales. Other incomes were estimated based on what households earned from non-diamond mining activities. A range of income brackets were created and the mean income was calculated.

CHAPTER4: HISTORY OF DIAMOND EXPLOITATION IN SIERRA LEONE

4.1 Introduction

This chapter investigates diamond mining and marketing in Sierra Leone, an essential facet of the country's economic and political life since the inception of mining in the 1930s. Although diamond concentration varies, the spatial extent of diamonds is widespread (Figure 4.1). The main goal of this chapter is to address hypothesis one: "introduction and maintenance of patrimonial politics and growing informalization of diamond exploitation in Sierra Leone have historically reduced the positive role of diamonds in national and local economic development largely into a resource curse." In order words, it assesses the degree to which diamonds, over successive periods, have been transformed from being more of a 'resource 'blessing,' to more of a 'resource curse' for Sierra Leone. The chapter illuminates how governments have formulated mining policies geared towards fiscal revenue generation for national development, but for the most part 'underdevelopment' has been the outcome. It examines the sociospatial dimensions of power relations surrounding diamond extraction and marketing, and the socio-economic outcomes at the national and local levels. Various social actors with multiple interests, motivations, and actions and differential power relations have been involved in diamond exploitation and have used their operational scales to achieve different and sometimes conflicting goals (Bryant and Bailey, 1997). Attention is paid to how political and economic structures enabled some actors to benefit immensely while others bore the cost, and how those actors with limited power circumvented extant and entrenched structures to achieve their aspirations/goals. It also examines the degree of enforcement of national diamond mining laws/policies in relation to illegal exploitation,

and how some regulatory officials had been either complacent or colluded with other actors to achieve their economic and/or political interests.

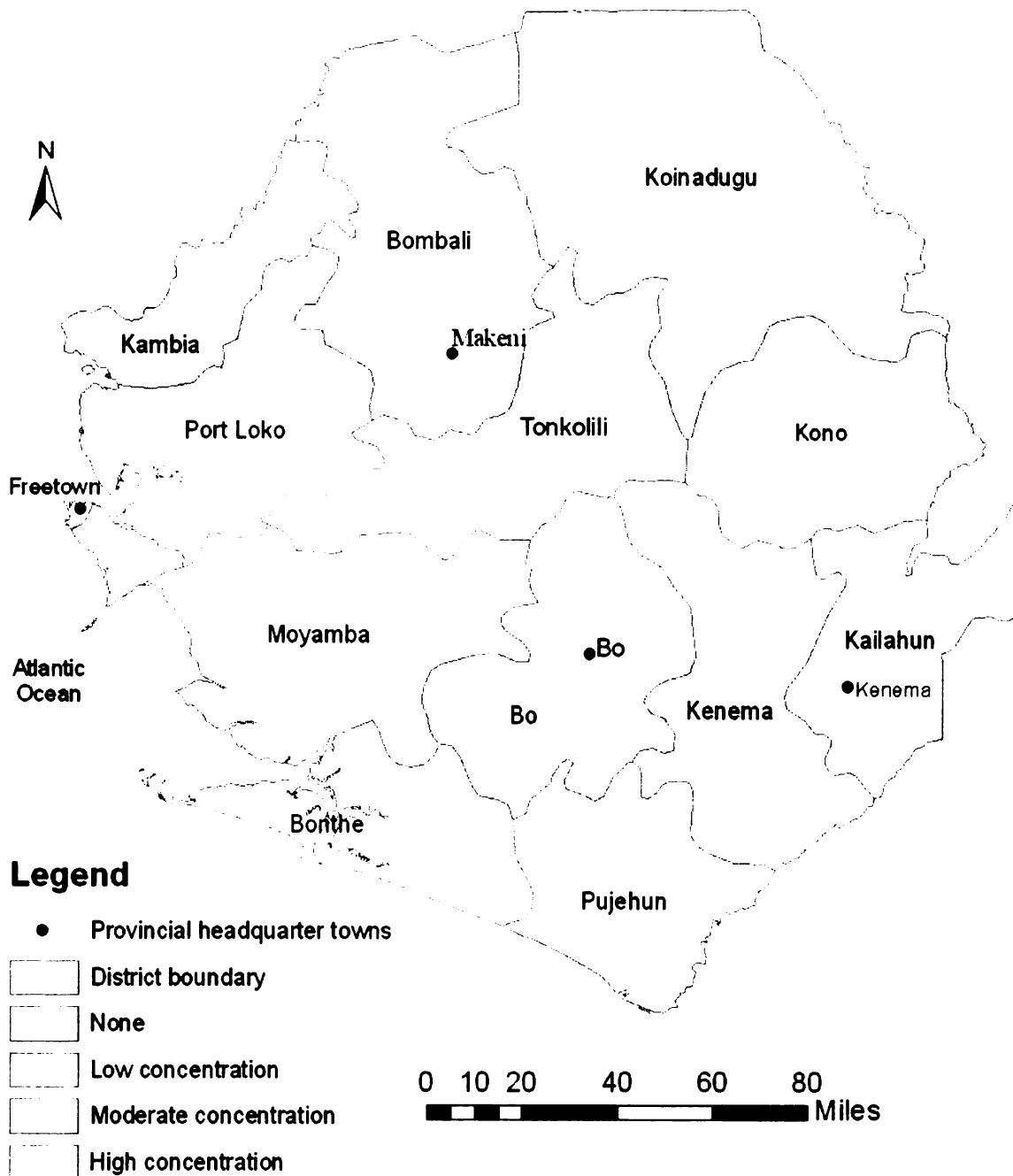


Figure 4.1 Map of Sierra Leone showing diamond concentration by district

Data for this chapter were obtained from archival sources as well as interviews. The principal sources of information were historical records from the Sierra Leone National Archives, the Ministry of Mineral Resources, the Kono Government Office, various government reports, published works, and theses/dissertations. Data were also obtained from oral historical accounts of elderly people and informal interviews.

The discussion will be structured along the following: 1) diamond exploitation during the colonial era; 2) diamond exploitation in post-colonial to pre-civil war period; 3) diamonds and the civil war; and 4) diamond management in post-conflict Sierra Leone. The four time period were chosen because they were significant benchmarks in the country's political fabric which had major implications on its diamond industry. A historical overview of diamond exploitation in Sierra Leone is relevant as it demonstrates the varying degrees of the resource curse over time and that the contemporary situation has historical bearing.

4.2 Diamond Exploitation during the Colonial Era (1930 to 1960)

During the colonial period a number of economic and political policies were initiated to facilitate an effective system for the production and marketing of diamonds. The most significant innovations were government's monopolistic control over the mining, marketing, and utilization of mineral revenues. The period also witnessed the emergence and growth of illicit diamond mining. Local political pressure and security threats over illicit mining necessitated the introduction of a dual mining system (corporate and artisanal mining) and the establishment of mining community development projects.

4.2.1 Initial Mining Policies

Colonial government's hold on Sierra Leone minerals was consolidated following the enactment of the Mineral Ordinance in 1927 which vested control of all minerals in the Crown (Greenlaugh, 1985; Laws of Sierra Leone, 1946; Van der Laan, 1965). From the onset, the power relations surrounding access, control and utilization of mineral resources were asymmetrical as the colonial authorities in London and the colonial government stationed in Freetown had considerable if not absolute power over minerals. In justifying its position towards mineral exploitation, the colonial government maintained that it was better placed to negotiate mining concessions with corporate entities than the traditional leaders –paramount chiefs and their subordinates (Van der Laan, 1965).⁴⁸ Thus traditional leaders were not involved in negotiation for industrial diamond mining concession.⁴⁹

Government's authority over minerals was manifested in the negotiation, and terms of corporate mining concession following the discovery of diamonds by the geological survey team in 1930 in the Gbobora stream, Nimikoro Chiefdom in Kono District of Sierra Leone (Saylor, 1967; Van der Laan, 1965; Zack-Williams, 1995). The Consolidated African Selection Trust (CAST) a subsidiary of the Selection Trust Group of London, with shares held by De Beers Consolidated Mines Limited of South Africa, was notified about the discovery (Van der Laan, 1965; Zack-Williams, 1995). In 1931 the colonial government of Sierra Leone granted CAST an exclusive license to prospect 4,170 square miles in areas adjacent to the initial discovery (Saylor, 1967). Prospecting results indicated that there were deposits over the entire area but substantial deposits

⁴⁸ The chieftaincy structure is hierarchical and consisted of the paramount chiefs, sections chiefs, town/village chiefs.

⁴⁹ This was the case of gold mining that started in the late 1920s and diamond mining in the early 1930s.

existed within the Bafi-Sewa river system especially in Kono and Kenema districts. In fact, considerable prospecting from 1932 to 1935 indicated that the principal deposits were within 90 square miles centered on Yengema near Koidu, Kono District (Zack-Williams, 1995). Based on the prospecting report, CAST applied to the British Colonial Government for exclusive diamond mining rights for the whole country. Although the United African Company (UAC) was also interested in mining, the Legislative Council in Freetown turned down its application and granted exclusive prospecting and mining rights to a Britain-based foreign company (Saylor, 1967; Zack-Williams, 1995).⁵⁰ CAST, on behalf of its subsidiary, the Sierra Leone Selection Trust (SLST) established in 1934, argued that success of operating the diamond fields would be difficult if several parties were involved. Further, it underscored that “only when diamonds are in strong hands can the market be kept on a payable basis” (Zack-Williams 1995:51). However, it appears that the colonial government granted industrial mining concession to a British company because of its own interests. According to an agreement in 1935 (Ordinance No. 22 of 1935), CAST was granted exclusive rights for the production and marketing of all Sierra Leonean diamonds for a period of 99 years. CAST agreed to pay 27.5 percent tax of net profits (later increased to 45 percent) and a £7,000 per annum mineral rent to operate the Sierra Leone leases (Burke, 1959; Saylor, 1967; Van der Lann, 1965).⁵¹ Thus government consolidated its power to control diamonds and generate mineral revenue following the commencement of industrial diamond mining.

⁵⁰ Members of the legislature were mainly Europeans with a few representing the colony of Freetown while there were no representatives for the rest of the country.

⁵¹ The £7,000 mineral rent was paid to the Protectorate Mining Benefits Fund. The rest of Sierra Leone (excluding the Western Area) was referred to as the Protectorate and this included the diamondiferous south-eastern Sierra Leone.

4.2.2 Diamond Production and Economic Implications for the Government and DeBeers

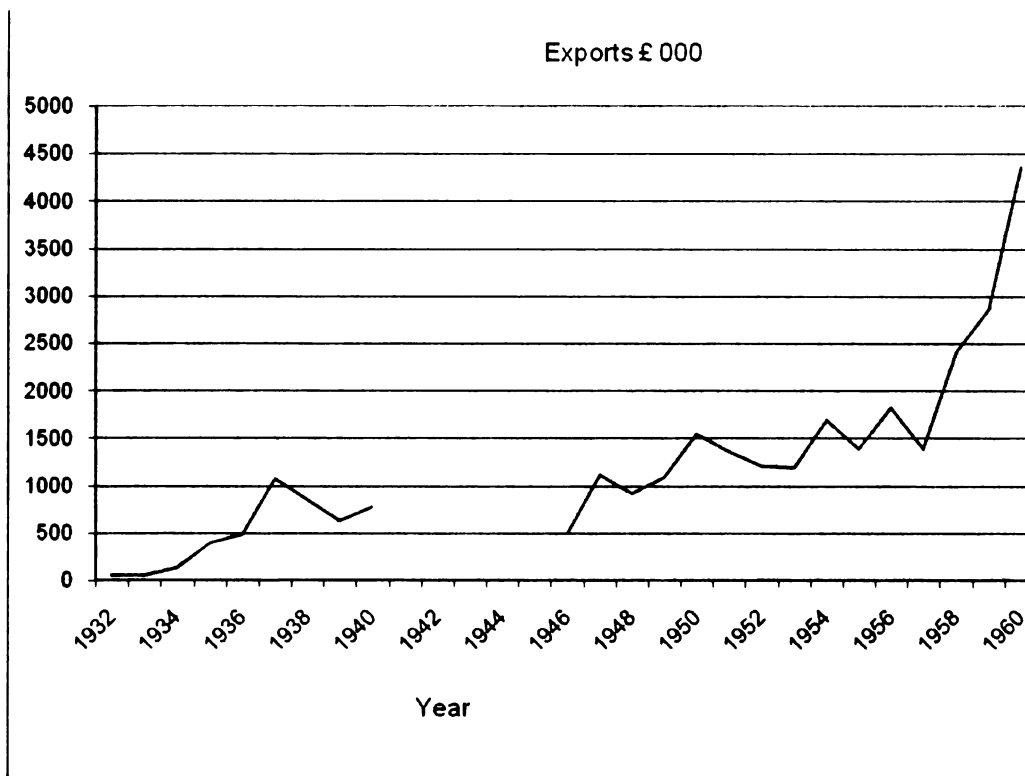


Figure 4.2 Value of diamond production in the colonial era

Note: no data available for the period 1941 to 1945

Growth in industrial diamond production was of economic importance to the colonial government of Sierra Leone. As of 1936 diamond production accounted for 56 percent of exports (Saylor, 1967). In fact, revenues from corporate diamond mining transformed the colony's budget from deficit to surplus up to World War II. As indicated in figure 4.2, from 1949 onwards the value of production exceeded £1 million. In 1958 production per carat increased by 28.1 percent of the previous year's exports, while value of production increased from £1.395 to 2.415 million (73.1% increase). Although output figures rose by only 3.8 percent from 1959 to 1960 production value for the same period increased by 52.6 percent (from £2.856 to 4.358 million). This could be attributed to

rising global demand and a steady to increasing global market price of diamonds. Unlike other minerals, diamonds were generally not affected by price volatility, thus government's share of mineral revenue was encouraging. During the period 1948 to 1952 (following the intensification of mining) the SLST paid the government of Sierra Leone £3.113 million (Van der Laan, 1965). From the economic perspective, therefore, corporate mining was very beneficial to the national government.

While diamond production was regarded as an economic windfall for the colonial government it was considered a threat to business ventures of De Beers, a major *defacto* regulator of the supply and price of rough diamonds in the international market. The Central Selling Organization (CSO), an arm of De Beers, was responsible for the purchase of 80 percent of global rough diamonds. De Beers' prudent action was to incorporate SLST into the diamond cartel so as to prevent flooding of the international market with rough diamonds. An agreement was reached in which DeBeers would buy at least £1,395,000 of outside producers which included some of Sierra Leone's output. This purchasing agreement was short-lived as it was only implemented for two consecutive years. The major impediment was declining production due to a reduction in proven deposits. In fact, Sierra Leone's share of the world market output (in carats) dropped precipitously from 4.6 percent in 1947 to 1.7 percent in 1952.

4.2.3 Power Relations between the Government, the SLST, Chiefs, and Mining Communities

Although national control of diamond exploitation served as an economic stimulus for the colonial government, the position of local people in the diamond economy was marginal. The colonial government negotiated industrial mining concessions without the involvement of the indigenous Kono residents (Conteh, 1979;

Reno, 1995). In fact, SLST held a meeting with chiefs and elders and required that they signed agreements by which they divested their rights to land and minerals to the company for nothing in return. Unequal power relations between the colonial government and the local people of Kono were also manifested when, in a feeble attempt to seek the interest of natives, the government passed laws which stipulated that locals be compensated for items destroyed during mining; yet the amount was arbitrary fixed by the government without input from the people who owned the land. As of 1934 only one compensation payment had been made but recipients were dissatisfied with the paltry sum (Conteh, 1979). Apart from surface rent payable to paramount chiefs, the initial agreement did not make provision for royalties to the Konos.⁵² Furthermore, Kono local residents were restricted from mining except to serve as laborers in the industrial mining sites. The colonial government collected mineral revenues and directed spending while the natives were excluded in decision making related to diamonds (Reno, 1995). This eventually led to popular resentment which affected the state's capacity to control diamond mining.

State's capacity was clouded with sociospatial power struggles between the central government and local chiefs who had marginal status in the formal diamond economy. Unlike chiefs, ordinary Konos virtually had no role in the formal diamond economy. Chiefs anticipated direct economic benefits in exchange for political loyalty as was the case prior to diamond mining. However, chiefs regarded their exclusion from diamond mining as an unjustified extension of state power over their authority. They

⁵² The Konos are the natives of the diamondiferous district of Kono and they own the land based on customary land tenure.

therefore utilized a social network of strongmen to defy colonial mining policy.⁵³ As a consequence, the colonial government in Freetown embarked on reform so as to increase state capacity to directly control diamond wealth. It also hoped to address the growing dissatisfaction amongst Kono residents with regards to the rate of development (Reno, 1995). Yet, in enhancing state control, the colonial government maintained and increased native authorities' prestige, encouraged their ideas, and supported their authority. Such measures adulterated the intended motive of reforms – an effective and capable state administration. Kono chiefs, however, considered the reform unfavorable as they were denied formal authority over what they viewed as their rightful powers over mineral resources. However, government's effort to increase state institutional capacity included greater legal powers to chiefs in regard to the "alienation of land, control of settlement and local immigration" (Reno 1995:46). The special gains of chiefs eventually affected state's capacity over diamonds as they became essential conduits for chiefs' influence over diamonds in subsequent years.

While the colonial government and the mining company's intent was to ensure the flow of mineral revenues with marginal economic benefit to the local people in mining communities; chiefs utilized their socio-spatial and political power for personal economic gain by encouraging informal diamond mining. In 1936, the national government enacted the Diamond Industry Protection Ordinance. The main goal of this ordinance was to control international and local migration in the diamond protection area.⁵⁴ The colonial government delegated power to the SLST to police the protected area which resulted in

⁵³ Prior to diamond mining the colonial government had assigned formal and informal authority to chiefs and this had led to the growth of a social network of influential traditional authorities and their allies.

⁵⁴ Only those belong to the Kono ethnic group were regarded as natives.

the establishment of the Diamond Protection Force (Van der Laan, 1965).⁵⁵ This led to growing resentment among Kono residents who regarded this law as an intrusion of local administrative power and an unwarranted extension of state power to alienate Konos from the region's major resource. A chief felt that by restricting the inflow of migrants, his authority was undermined and that such action could result in disruption in his chieftdom (Reno, 1995). A standard practice was the payment of rent to chiefs for migrants' protection. Colonial government officials believed that security officers had persuaded local chiefs to work in the interest of the new law. With the belief that chiefs could control the influx of migrants (many of whom were illicit miners), SLST made unilateral agreements with them in which each was given £50 annually to withhold settler rights of migrants (non-Konos). Yet, chiefs who had power to determine who would reside in mining chieftdoms in Kono, continued to permit more migrants because the migrants (locally known as "strangers") paid huge sums for permission to settle in the diamondiferous areas of the district (Hirsh, 2001; Rosen, 1973). Such double-dealing was inimical to the economic interests of government and the company in particular but aided migrants' goals which were to circumvent the company's monopolistic mining rights by engaging in illicit mining (Hirsch, 2001). As head of chieftdoms, chiefs therefore utilized their socio-spatial and political authority to acquire personal wealth from migrants and the company.

4.2.4 Political Transformation and its Implications on Diamond Management

Constitutional changes in 1947 resulted in fundamental transformation of the political system with implications on mineral resource management. Amongst other things, the 1947 constitution made provision for representation of provincial members in

⁵⁵ CF 47/34, Diamond Protection Force, 5/29/1934, 2.

the legislative council. However, it was a dual political system (generally referred to as 'indirect rule') in which a centralized national government dominated by national political leaders was dependent on traditional leaders headed by paramount chiefs (Cartwright, 1970).⁵⁶ The inclusion of elected Africans in the legislative council in 1951 resulted in growing demand for better economic benefit (in the form of fiscal revenues) from the SLST (Van der Laan, 1965). Political pressure from indigenous politicians reduced the power of a purely colonial government whose economic interests (like that of the company) were both internally and externally driven.⁵⁷ A number of negotiations in Freetown and London resulted in a review of tax liabilities of SLST that were more favorable to the government of Sierra Leone. While income tax was 45 percent, the new agreement called for a combination of income tax and diamond industry profit tax that together amounted to 60 percent of profits. The estimated increase in government's revenue from these tax amendments was £145,000 for the period 1951 to 1952 and about £105,000 for fiscal year 1952-53 (Van der Laan, 1965). It was also agreed that the company increase annual mining rent payable to the Protectorate Mining Benefits Fund from £7,000 to £10,000, and another annual grant of £10,000 to Kono and £5,000 to Lower Bambara Chiefdom in Kenema District (SLST, 1966). These grants were meant for the development of roads, water supplies, education, agricultural and other projects in the diamondiferous communities. Thus the new political dispensation succeeded in

⁵⁶ Prior to that, there was a system of indirect rule in which a British dominated centralized government ruled the protectorate through paramount chiefs.

⁵⁷ Both the colonial government and the SLST had strong political/economic association with colonial authorities in London and investors in UK.

increasing central government's mineral revenue and ensured that additional grants were paid to Kono and Kenema Districts.⁵⁸

Though corporate mining was very beneficial at the national level, it also contributed to some level of development in mining communities. Company laborers were mainly natives of the mining districts. Local company employees increased from less than 2,000 in 1942 to over 3,500 in 1960. The company built quarters for employees and made accessible the company's hospital for staff and their families (SLST, 1966). On average 56,000 patients were treated annually in the company's hospital of which 42 percent were not company workers. Company's grants were used to build schools in Kenema and Kono while the company expanded roads and provided tools for community development projects including bridges and roads. In terms of social infrastructure, corporate mining was regarded as a blessing for mining communities. However, from an economic perspective, mining chiefdoms did not derive much benefit as it was more of an enclave economy. Although company's laborers who were an insignificant percentage of the population in the diamondiferous chiefdoms received some financial rewards, many other residents did not.

4.2.5 Power and Agency: the Case of Illicit Diamond Mining

The non-participation of indigenes and other nationals (except as laborers) in diamond mining, and the informal intermediary roles of chiefs may have influenced illicit mining.⁵⁹ Two events in the period 1940s to 1950s contributed to illicit mining. The first

⁵⁸ These were the two districts where industrial mining was undertaken.

⁵⁹ Chiefs played an informal intermediary role between the diamond industry and Kono residents (Reno, 1995; 49).

was the influx into Kono of Lebanese and West African nationals.⁶⁰ These migrants, who were mainly entrepreneurs had enough capital to buy illicit diamonds and therefore stimulated local participation in illicit diamond mining. Illicit mining was also aided by the behavior of some chiefs. They utilized their positions in the colonial state and their customary role as 'landlords' to offer protection of illicit miners for personal economic reward. Colonial rulers believed that chiefs were custodians of land "in a socially enforceable sense and responsible for law and order" (Reno, 1995:49). Chiefs had great control over the settlement arrangements of strangers that were seeking Kono's diamond wealth illicitly. It was reported that chiefs in Nimikoro and Gbense (the heart of diamond deposits) allocated plots to immigrants rather than local residents as the former paid "consideration."⁶¹ Thus, Lebanese and wealthier Africans were in a better place to obtain valuable land-use rights. The second was the growth of the Kono Progressive Movement (KPM) in the 1940s that advocated for political emancipation, and for development of Kono through diamond proceeds (Rosen 1973).⁶² The KPM was therefore vociferous in its clarion call for active participation of Konos in the diamond industry. The belief that the land and its resources belong to the Konos contributed to illicit mining as individuals felt that it was their right to mine though their action was illegal (Rosen, 1973).

Actors involved in illicit mining, dealing and smuggling, aided by organized social networks, circumvented existing mining regulatory structures to satisfy their economic gains. These social networks existed across local, national and regional levels.

⁶⁰ They were referred to as strangers and paid rents to chiefs. It is reported that these strangers while engaging in trade, bought diamonds and also encouraged and supported illicit miners.

⁶¹ 'Consideration was the money strangers paid to chiefs to settle and eventually engaged in illicit mining activities.

⁶² SLST and the government agreed in 1954 that £10,000 be paid for development purpose. However, SLST in its bid to forestall illicit mining unwittingly paid directly to chiefs for 'development' purposes. This did not solve the problem as others who did not benefit from such payments continued to mine illicitly.

It can also be argued that initially illegal diamond mining was a reaction to the exclusion of natives from mining in their communities. In other words, the action of the marginalized people against powerful actors (in this case the colonial government and SLST) was to turn the balance of power in their favor by engaging in illicit diamond mining. Those with investment capital locally called 'arrangement masters' provided financial support to illicit miners. Illicit miners used various strategies to access the rich deposits of SLST (Rosen, 1979). Security men were bribed to allow nocturnal illicit mining operations in SLST concessions. Illicit miners also hired vehicles that they drove into SLST mines late at night and shovel gravels into them. The vehicles loaded with gravels were taken to distant locations where they were washed to obtain gems.⁶³ It is essential to mention that though miners got earnings from illicit diamonds, they did not know the actual value of diamonds. Their economic reward was a fraction of the actual value of the diamonds extracted. Illicit dealers bought diamonds from the 'arrangement masters' that sold them to other influential dealers. These dealers invariably smuggled diamonds out of Sierra Leone (Van der Laan, 1965).

While chiefs and financiers were benefiting from legal and illicit mining, the SLST was seriously concerned about the growth of illicit mining. The period 1953 to 1957 witnessed a dramatic increase in illicit miners from 5,000 to 75,000, about 10 percent of the labor force (Smillie et al. 2000). The company therefore called on the government to combat illegal activities. The government felt that migrants were primarily responsible for illicit mining and decided to substantially reduce the influx of

⁶³ Informal interview with an elderly person in Yengema, Nimikoro Chiefdom.

migrants to mining areas.⁶⁴ Based on the Diamond Industry Protection Ordinance and the Aliens (Control in Special Areas) Ordinance, the government expelled foreigners from the SLST lease areas and 15 chiefdoms in Bo and Kenema districts in October 1956.⁶⁵ A subsidiary act – the Tribal Authorities (Restriction of Strangers in Kono District) Order – was passed in 1956 and was extended in 1957/58 to include Kenema district. These acts resulted to mass expulsion and limited non-natives in mining areas to only 5,000 per district.⁶⁶ Government security forces (the police) also arrested and tried illicit miners but occasionally encountered violent reactions.

Conflicts between illicit miners and security forces increasingly became violent in the 1950s. While some illegal miners bypassed security forces, others had gangs organized like riot units with a line of slings men with stones and a second rank of men with cutlasses or knives (Daily Mail, 1959:1a). Diamondiferous mining communities were “verged on anarchy, with armed bands of as many as 400 to 500 men raiding SLST... areas, and on occasions doing battle with the police” (Cartwright, 1970). Other reports also indicated that these armed bands attacked security men guarding the reserves and sometimes overrun them with numerical strength. In 1958 there were recurrent attacks on police posts at swamps resulting in the firing of teargas and on three occasions police fired live ammunition in self defense. The armed gangs’ major mission was to protect illicit diggers from police arrest. There were instances in which illicit miners set up road blocks to prevent police patrols from carrying out raids and in attempting to

⁶⁴ It was estimated that about 75,000 miners mainly migrants were involved in artisanal mining in the mid-1950s.

⁶⁵ The expulsion was code named “Operation parasite” and led to the expulsion of 25,000 to 45,000 foreigners especially West African nationals.

⁶⁶ Non-natives were Sierra Leoneans who belonged to other ethnic groups who migrated to Kono District. Those belonging to the Kono ethnic group were regarded as the natives of Kono District.

remove a barricade a police patrol had been fired on but no casualty was reported (Patnelli, 1959). Nevertheless, police arrested over 500 illicit miners and over 2000 men for residing in the diamondiferous areas without permit in November and December 1958 (Daily Mail, 1959a).⁶⁷ The massive expulsion of international migrants from the diamond protection areas and the punitive actions taken against violators contributed to the diminution of illicit mining in 1959 and the early 1960s.

While there were patrol officers and stringent penalties for illegal diamond operations, actors in most instances successfully carried out their illegal activities. Regional trading networks used by Mandingos and Fulas businessmen were utilized for illegal diamond transactions in the early to mid-20th century (Reno, 1995; Van der Laan, 1965). Some diamonds were smuggled through Freetown while others were taken across the border directly to Liberia and Guinea which are part of the international market.

The growth of illicit mining (exacerbated by the diamond rush) had economic implications for the SLST and the colonial government. The government lost substantial customs revenues due to smuggling of illicitly mined diamonds to neighboring countries, especially Liberia. It was estimated that in 1954, 360,000 diamond crystals valued at £5.4 million were mined illegally and smuggled out of Sierra Leone (Van der Lann, 1965). The diamond rush was evident and by 1954, a number of Sierra Leoneans (migrants from non-diamond areas), Africans and Lebanese were fully involved in illegal diamond mining in Kono and also in the diamondiferous areas in Bo and Kenema districts⁶⁸ [Figure 4.1] (Greenhalgh, 1985). The diamond rush could be attributed to increasing

⁶⁷ Arrests of dissidents were frequent in the 1950s and the numbers dramatically increased in 1959. As of December 1959 1,364 people were arrested of which 195 were arrested for illicit mining while the others were strangers without permits (c.f. Daily Mail, 1959c, 1959d).

⁶⁸ The diamond rush was more evident during the period 1954 to 1956 as several people migrated to the diamondiferous areas (See Van der Laan, 1965; Zack-Williams, 1995).

global diamond prices, widespread recognition of the spatial extent and value of diamonds, the collusion of foreigners particularly Lebanese and nationals in illegal mining and smuggling. Other factors that aided the diamond rush were advancement towards political emancipation, the willingness to flout laws, the increasing belief that African diamonds should be for Africans, and the recognition that one can strike it rich (Greenhalgh, 1985).⁶⁹ The Central Selling Organization (CSO) was concerned that production by diggers will affect its 80% level of rough diamonds as the outside market would receive part of this production. An outside market was operating in Monrovia. In order to strengthen its supply CSO established a buying organization responsible for channeling the production of diggers in Sierra Leone to CSO. However, illicit mining and smuggling were on the increase. Thus, in 1955 SLST and the government decided that illicit diamond mining and marketing was beyond their control and was becoming a threat to state security. They therefore agreed that a measure to combat illicit diamond exploitation was to abrogate the 1935 corporate agreement which gave exclusive mining rights to the SLST (Van der Laan, 1965; Greenhalgh, 1985).

4.2.6 Policy Shift: the Emergence of the Artisanal Diamond Mining Scheme

The new agreement had a number of conditions that essentially created opportunity for the accommodation of alluvial diamond mining. It stipulated that SLST reduce its exclusive rights to an area of 310 square miles in Kono district and Lower Bambara chiefdom in Kenema district where there were proven diamond deposits (PAC, 2005; Saylor, 1967).⁷⁰ The 99 year lease was substantially reduced to fifteen years and the possibility of subsequent renewal. In agreement to the new concession, SLST

⁶⁹ As of December 1954 the estimated number of illicit miners in the diamond areas was 30,000 (c.f. Van der Laan, 1965)

⁷⁰ Mines Department Report, 1957, pp. 3-6.

obtained £ 1.57 million as compensation with a proviso that government increased border patrol of SLST's new lease area. Thus the spatial reconfiguration (reduction in SLST land area), and the abrogation of the exclusive rights of the SLST created opportunities for alluvial diamond mining by individuals or groups.

The Alluvial Diamond Mining Ordinance 1956 (Cap. 198) was the legal framework for the establishment of the Alluvial Diamond Mining Scheme (ADMS) in the non-SLST diamond areas. Its primary goal was to legitimize indigenous miners, reduce smuggling and improve government's mineral revenue. This scheme allowed the minister to declare land in the protectorate to be a licensed alluvial diamond mining area. The inspector of mines, on the recommendation of the local tribal authority and the agreement of the landholder and occupier, can grant an alluvial diamond mining license to a native of Sierra Leone or a firm owned by Sierra Leoneans (GOSL, 1956). The spatial extent of each licensed area was 1,000 feet by 400 feet with a maximum of 20 laborers or tributors per license (Saylor, 1967; Zack-Williams, 1995).

Although indigenous participation in alluvial mining was a welcome idea, the socio-spatial dimensions of power relationships created opportunities for some actors and constraints for others. While political and economic benefits were highly favorable to chiefs and migrants (financiers of mining ventures) the natives of mining communities remained at the economic margin in terms of benefits. Though most chiefs did not have the investment capital for mining, they utilized their administrative position to gain favor from mining investors (Rosen, 1973). A provision of the Alluvial Diamond Mining Ordinance was that artisanal mining license should be granted for six months and was renewable. It stipulated also that chiefs had to endorse permits for alluvial mining

operations in their chiefdoms before a license can be issued. Those investors who came across rich deposits in the first six months of mining were eager to ensure that their licenses would be renewed. In return they paid chiefs huge sums which were known as 'consideration money.' As chiefs had control over land that can be licensed, they gave relatively poor deposit areas to license holders who paid lower amounts of 'consideration money.'⁷¹ Chiefs also used their political power for economic gains following the enactment of ordinances that reduced movement of migrants to diamondiferous communities. They manipulated residence codes and exempted strangers from residence permit requirements by placing them on Tribal Authority Lists (Rosen, 1973). Other strangers were given renewable chiefdoms permits. Migrants (especially the foreign ones) were therefore under chiefs' control and rewarded the later well for continued favor.

In addition to illegal payments made to chiefs, the ADMS was administered in a way that was more favorable to traditional authorities and non-Konos and less so for Konos (especially those not directly related to chiefs). Rosen (1973) has noted that over 65 percent of licenses were held by those who did not belong to the Kono ethnic group and that 14 percent of licenses were held by those related to chiefs. Prominent chiefs owned some of the mining plots. Thus very few Konos (apart from traditional authorities and their associates) were able to successfully engage in legal mining. Another impediment to the ordinary Kono resident was lack of initial capital outlay. While the ADMS resulted in scalar reconfiguration from the exclusively industrial to local participation in diamond mining, chiefs were the greatest indigenous winners.

⁷¹ Chiefs' knowledge of proven deposits was based on a combination of the following: soil type, location close to rivers/streams and previous outputs in places with similar attributes.

4.2.7 Policy Shift: Diamond Marketing Structures

While monitoring and enforcement minimized illicit mining, diamond trading and marketing arrangements eventually curtailed smuggling. The ADMS made provisions for the establishment of dealers and exporter licenses. License holders were required to sell to dealers or exporters. Section 13(1) of Cap. 198 states,

“Subject to the provisions of sub-section (2) of this section the Governor in Council may grant to any person an alluvial diamond exporters license to export alluvial diamonds mined or found in the course of prospecting under this Ordinance on such terms and conditions and for such a period as he may see fit.”

The absence of a single buying organization in Sierra Leone until 1959 meant that smuggling was still a cause for concern. The Diamond Corporation Agreement ratified in September 1959, however, legally allowed the Diamond Corporation (DC), (a private South African company) to value, price and market diamonds (DFID, 2004). The agreement also required the establishment of the Government Diamond Office (GDO). The government believed that it was in the interest of the country that all diamonds (apart from SLST's) should be exported and marketed only by the Government Diamond Office. While the contracting of DC was a welcome gesture of government, a senior official of SLST asserted that DC manipulated their assessment of SLST's diamond supply. Consequently, price increases negotiated by SLST with DC resulted in reduction in the number of gem quality diamonds that was indicated in shipments. The South African based DC was replaced by a British based company Diamond Corporation of West Africa (DICORWAF) in 1961. Unlike the DC that was accused of price undervaluation, DICORWAF stabilized diamond prices and reduced export duty to 4 percent. It

therefore succeeded in buying output for alluvial miners. Eventually its exports surpassed SLST. Subsequently, the government (through De Beers influence) persuaded DICORWAF to market all Sierra Leone diamonds through the GDO. Within the period 1955 and 1962, diamond traders and diggers found out that the price paid by the central buying office (based on its price book) was influenced by price changes in the international market. As Van der Laan (1965:112) notes:

“When the GDO was opened in August 1959, copies of the new price book were available to guide the buyers. The diamond dealers soon discovered that the prices were higher and began to sell more diamonds (reduce their smuggling). From the opening till the end of June 1961 (a period of 23 months) £21.5 million of diamonds were bought, while the [Diamond Corporation in Sierra Leone] DCSL has bought only £14.7 million during the 42 months in which it was a licensed exporter. The GDO attributed its success to regular reviews of prices which ensured a close correspondence with trends in the outside market.”

Within these provisions, the Mines Department confirmed that smuggling was reduced to about £1-2 million per year since 1959 unlike the £ 10-15 million worth of diamonds that were smuggled between 1954 and 1959.⁷² This is an illustration that with proper policies, smuggling can be reduced to low acceptable levels.

The reduction of smuggling following improved marketing of alluvial diamonds was economically beneficial for the government. Alluvial diamond mining contributed significantly to the official diamond export in the early years of the ADMS. In 1959, alluvial diamonds accounted for 47.1 percent of total diamonds exported and were valued at £1.627 million while in 1960 they were 73.3 percent of total diamond exports valued at £2.125 million (Van der Laan,

⁷² Report of the Mines Department, Sierra Leone, 1962, pp.4-5.

1965). Thus government's revenue generated from alluvial diamonds was significant.

4.2.8 Mining and Community Development Programs and Political Economic Implications

The establishment of ADMS was followed by the creation of the Mining Area Development Association (MADA) which was set up to enhance development in diamondiferous districts that had received little gains from diamond revenues made to the state treasury. This move was partly a response to the Kono disturbance of 1955 and politicians' assertion that Kono was not benefiting from diamond revenues (Reno, 1995).⁷³ However, the real intention of MADA was jeopardized due to misappropriation of funds by chiefs and local bureaucrats.⁷⁴ In attempting to rectify the situation, the government in Freetown and SLST were met with threats of non-cooperation by the chiefs. In theory, MADA should have fostered development of mining communities but in practice it served to ensure stability and political allegiance to British-favored political organizations like the Sierra Leone Peoples Party (SLPP). In fact, it was alleged that in 1962-63 MADA funds were used to purchase electoral support as the KPM was in stiff competition with the ruling SLPP. This demonstrates that diamond proceeds and control of the district became intertwined with broader political issues (Hirsh, 2001). It also elucidates corruption amongst district authorities and weak and/or inept institutions at the local level.

In addition to MADA, a Contract Mining Scheme (CMS) between SLST and diamondiferous communities was initiated in 1959. The desired objective was to ensure

⁷³ A group of miners stormed company security guards and police post. The Kono riot was attributed to popular dissatisfaction with chief's influence in illicit markets and their special access to state resources (c.f. Reno, 1995).

⁷⁴ The elected district council was given the task of administering the MADA program.

better cooperation between diamondiferous communities and the SLST, and that both parties benefit economically from diamond exploitation. The company's intention was to grant contracts to local Kono miners to mine areas within the Yengema concession that was not viable for industrial production (Rosen, 1973; SLST, 1966; Van der Laan, 1965).⁷⁵ It was intended that contract holders mine sites allocated within the SLST lease areas and sell diamond 'winnings' to the company. Miners were not provided with labor or given equipment but could rent the company's equipment. They were also exempted from the Mineral Ordinance that allowed a maximum of twenty laborers for an alluvial mining plot. In justifying this move, the company's General Manager maintained that the alluvial mining scheme was creating many gutted and derelict areas and that the ADMS introduced by the government in 1956 was not working. He asserted that the contract scheme would enhance the development of resources in Kono by using the company's techniques (Reno, 1995; Rosen, 1973). While the developmental motive was plausible, another possible reason was that the ADMS could be abolished and the CMS could discourage illicit mining that was becoming a major security and economic challenge both to the SLST and the government. The agreement stipulated that contract awardees should be nominated by the paramount chief of the chiefdom of the proposed mining site.

While paramount chiefs were expected to nominate miners, they manipulated the system for personal economic gains contrary to the initial objective of the CMS. For instance, PC Bona of Nimikoro awarded contracts to two relatives and an influential supporter who subsequently sold shares at an exorbitant amount (\$125) per share (Rosen, 1973). Though the company refused to accept direct contract with chiefs (as requested by some chiefs), within a few years they totally dominated the CMS. For instance, non-Kono

⁷⁵ A contact mining site was established near Tumbodu and another near Tefeya, in May and August, 1959

miners were only able to participate in CMS as partners with the Sando chieftaincy while in Nimikoro; non-Konos were not allowed to take part in the mining scheme (Rosen, 1973). Nevertheless, some Kono residents utilized the CMS for economic advancement.⁷⁶

4.2.9 Conclusion

Although unequal power relations between the colonial government and the local people resulted in initial success of monopolistic mining policies, political pressure from emerging local politicians and the expansion of illicit mining necessitated the establishment of a dual mining system and development schemes for mining communities. The colonial government established the ADMS to involve individual Sierra Leoneans in legal diamond mining, to increase government's mineral revenue and reduce illegal mining in SLST concession area; yet some diamond stakeholders were still able to circumvent existing administrative, regulatory, and economic structures by participating in illicit mining and smuggling. "Arrangement Masters" continued to support illicit operations especially within the SLST concession area in Central Kono and Lower Bambara, Kenema as they believed that it contained the richest deposits of diamonds. Part of the problem was the colonial government's incapacity to effectively patrol mining areas and exit routes to neighboring countries that served as market for smuggled diamonds. Another issue was that some chiefs colluded with illicit miners and smugglers. Furthermore, enforcement of mining ordinances was not quite effective. Interviews with elderly persons confirmed that diamond dealers were trading diamonds in Koidu town central Kono even though it was officially a non-dealing area. Miners also utilized circuitous diamond mining strategies. Interviews revealed that some license

⁷⁶ Interview with an elderly person who was a beneficiary of the CMS and loan equipment from the SLST for his mining activities.

holders were involved in legal mining during the day and illicit mining at night and were able to get illegally mined diamonds to the Government Diamond Office which was the only official exporter of diamonds.⁷⁷ There was also a complicated network of middlemen that facilitate legal and illicit transactions between miners and dealers.⁷⁸

Notwithstanding the negative impacts of illicit diamond exploitation, diamond mining contributed immensely to national economic development during colonial rule. Corporate mining was a resource blessing due to its profound economic contribution nationally. In 1960, for instance, the SLST paid a total of £1.139 million as taxation to the government (SLST, 1961). Apart from the direct contribution in the form of taxes on profit, grants and rents (discussed earlier), the company also made indirect contribution to the national economy. The company spent about £720,000 annually on salaries and wages and £670,000 on local purchases. Further, it expended £30,000 on customs duty and £15,750 on rail freight annually (SLST, 1961). It can also be argued that, to a reasonable extent, it was also a resource blessing to local mining communities as it provided some social infrastructure and services and employment opportunities.

4.3 Diamond Exploitation: Independence to Pre-War Period (1961 to 1990)

Although some of the colonial policies were retained, this period witnessed the politicization of diamond mining *par excellence* and its negative socioeconomic impacts on the majority of Sierra Leone. Diamonds were more of a resource blessing nationally at independence but such gains were eventually lost during Stevens' patrimonial and kleptocratic governance. The informalization of diamond exploitation and subsequent

⁷⁷ The Government Diamond Office was located in Kenema to purchase all alluvial diamonds for export. Subsequently it became the sole exporter of diamonds including SLST's production.

⁷⁸ These middle men included British subjects, aliens and native foreigners (Daily Mail, 1959b).

precipitous socioeconomic decline and growing discontent during the All People Congress (APC) rule set the stage for the civil war.

4.3.1 Diamond Production and Revenue Utilization during the Initial Years of Independence

Extant mining policies and laws at Independence in April 1961 created enormous financial gains for the government, the SLST, and diamond financiers.⁷⁹ An exception was a promulgation of the Diamond Marketing Act of 1962 which allowed the SLST to market only 50% of its production by value via the GDO (DFID, 2004). With measures in place to curtail diamond smuggling, export of corporate production and the ADMS rose significantly during the initial years of self rule.⁸⁰

Table 4.1 Diamond production and export at independence

Year	SLST production '000 carats	Export value £'000	ADMS production '000 carats	Export value £ '000
1961	889	4.428	1,406	11.541
1964	600	7,886	1,050	13.984

Source: Report of the Mines Department, 1932-63, Sierra Leone; and Quarterly Statistical Bulletin, No. 3 (1964)

As shown in Table 4.1 during the initial years of independence more diamonds were obtained through the ADMS than SLST's production. However, corporate payment to the government was substantial. In 1963, they paid about £2.5 million as income tax and diamond industry profit tax. In addition to that, corporations invested and spent about £2.2 million annually on other fields of economic development in Sierra Leone. This included £688,000 on buildings, roads, bridges, housing, mining machinery and ancillary services, £92,200 on food subsidies for workers, and £81,200 on medical and

⁸⁰ These included security measures and marketing incentives.

health services (Golf, 1989). On the whole, the company's annual expenditure in Sierra Leone was about £4.65 million which was about 5% of the national income. In the late 1960s and early 1970s, official diamond exports (from corporate and the ADMS) peaked with average production valued at \$250 million (1995 dollars) constituting 20 percent of GDP and 60 percent of foreign exchange earnings (Davies, 2006, 2008; Williams, 1982). On the whole the national government and the SLST made considerable economic gains from diamonds but these gains were not adequately reflected in the development of diamondiferous districts.⁸¹

Unlike a few foreign investors most local residents made modest gains from diamonds, thus could not improve socioeconomic conditions in the district. Financiers of diamond mining projects (who were mainly Lebanese and other West African nationals) made substantial economic gains while diggers barely managed to make a living. In fact, most diamond dealers (both legal and illicit) were of foreign descent and repatriated huge profits to their countries of origin. Furthermore, chiefs were not accountable for funds disburse to them for development purposes. Although some development projects were implemented, stringent accountable measure could have minimize the tendency of siphoning some development funds for personal use, thereby enhancing better community development programs.

4.3.2 Diamond Management under Siaka Stevens' Patrimonial Rule

While legal diamond mining had provided substantial economic reward for the government and the SLST, the inception of the Stevens' led All Peoples Congress (APC) brought about policy changes some of which were inimical to legal mining. Such changes

⁸¹ Not much was done in terms of social infrastructure and services with the exception of company's facilities.

created opportunities for some stakeholders and constraints for others and changed the balance of power amongst some interested parties. For the greater part of APC rule, politics and diamond exploitation were inextricably linked. Interestingly, Stevens opposed the ADMS in favor of corporate mining when he was minister of mines in the 1950s. However, in campaigning for the 1967 elections he successfully utilized a strategy that called for the freedom of the ordinary man to participate in diamond mining as diamonds symbolized the ordinary man's hope for acquiring wealth (Smillie et al., 2000). Stevens' party won the 1967 elections but a military junta seized power for a year; the APC was reinstated in 1968.

At the embryonic stage of its rule, Stevens' authority was threatened as he faced local challenges from affluent chiefs and their clients, especially the pro-SLPP stalwarts in the Eastern Province. A number of chiefs and their associates had acquired wealth from MADA and wanted to maintain the status quo. Yet, the Stevens' led APC believed that in order to consolidate power, the scale of management of diamond exploitation should be shifted from the local to the national level. Thus the APC government maintained decree 49 that was promulgated by the military junta in 1967. Essentially, decree 49 shifted the level of control of alluvial diamonds from the local to the national scale. It took the responsibility of assigning mining licenses from the chiefs to the Ministry of Mines (Akiwumi, 2006; Zack-Williams 1995). This change altered the extant bureaucratic structure of land tenure and deprived chiefs of additional revenue from rent and taxation. While this centralization of diamond control was expected to be good for the country's growth and development, in reality it was not. In order to ensure that the central government (through the Ministry of Mines) gained control of diamond

exploitation, he restructured the traditional elite and chieftaincy in the diamondiferous districts, especially Kono (Reno, 1995). The APC (headed by Siaka Stevens) undermined chiefs loyal to the opposition SLPP and installed rulers and a support network that were committed to the centralized government in Freetown. Stevens' firm arm of government was particularly demonstrated in his relations with corporate entities.

In a move to generate more revenue for the central government, a revised agreement on the marketing of rough diamonds came into effect in 1969. It stipulated that Diamond Corporation West Africa (DICORWAF) would pay an annual fee of Le330,000 (\$ 330,000 or £165,000) for the exclusive right to be the final buyer and exporter of all diamonds mined under the ADMS. Other taxes included a 7.5 percent export duty on diamond purchases at GDO, and income tax on any profits made by the marketing company (Van der Lann, 1965).

A significant post-colonial development occurred in 1970 when the APC government decided to transform the SLST to a quasi-national company. The government acquired 51 percent shares of the company and named it the National Diamond Mining Company (NDMC). By nationalizing corporate diamond mining and having direct stake in the business, the government hoped to obtain more benefits from diamonds through local employment creation, direct spending on social services for diamondiferous communities and high budget revenue (Lightfoot-Boston, 2009). Total taxes from NDMC constituted 70 percent of net profits (income tax, surtax, and diamond industry profits tax). In addition, the government obtained 51 percent of the remaining profit as a form of dividend. Therefore, the quasi-national mining parastatal was a major contributor

to fiscal revenues accounting for \$60 million dollars (3.6% of GDP) in 1974 (Davies, 2008).

While the financial gains through nationalization of corporate mining could be regarded as a resource blessing at the national level, Stevens had a hidden agenda. He wanted to find avenues for compensating his senior political stalwarts.⁸² Further, the government cut off revenue sources of chiefs following the nationalization of SLST and stopped paying them local development funds. Stevens therefore established a network of informal markets, the 'shadow state' in order to control the diamondiferous districts, especially Kono (Reno, 1995; Zack-Williams, 1999). By reconfiguring the patronage network, Stevens gained control of diamond revenues and greater political security which were two essential ingredients for his patron-client (patrimonial) form of governance. Patrimonialism is 'a form of political order where power is concentrated in the personal authority of one individual ruler.... The State is their private property, and the act of ruling is consequently arbitrary' (Thompson 2004:115).

An essential element of his patrimonialism was the patron-client relationship in which APC politicians and their cronies received favors in exchange for unflinching support of the party (Davies, 2000). The Ministry of Mines was an avenue through which Stevens controlled the organization of illicit mining by preferentially allocating private plots to his clients. Unlike indigenous elites and SLPP supporters, preferential treatment was given to foreigners (mainly Lebanese) who could not challenge him politically. Preference was given to foreigners in the allocation of mining plots bypassing opposing traditional leaders (Akiwumi, 2006). Part of the discrimination was also

⁸² Many of the top party officials were appointed to the board of NDMC and over time manipulated the company's operations for personal gains. These included exorbitant allowances for meeting and the misuse of the CCMS. Scheme.

manifested in the diamond business when in the early 1970s; the Gold and Diamond Office (the official purchaser of alluvial diamonds) started paying higher prices to Lebanese than indigenous miners (Levin, 2006). Realizing that their diamonds were undervalued, some indigenous miners decided to sell diamonds through other channels and this accelerated smuggling. Those miners who sold diamonds to the GDO received fewer amounts which were also reflected in the lower payment to diamond diggers. As a result of low rewards, diggers decided to seek their profits independently of miners and invariably switched to illicit mining. The growth in illicit mining and smuggling led to the diminution of official tax revenues obtained from diamonds.

Another policy that was meant to increase the standard of living of Sierra Leoneans (through the Africanization of the economy) was the launching of the Cooperative Contract Mining Scheme (CCMS) in 1973. In practice, this policy was part of the patron-client drive to satisfy APC clients. This scheme allowed the setting up of private digging companies to mine rich diamond deposits within the NDMC concession area (Fithen, 1999; Reno, 1995). These places were apportioned into 'blocks' or 'areas'. In essence, the scheme was specifically formulated to reward influential APC party stalwarts who included permanent secretaries, ministers, and members of parliament. In fact, implements used in these mining activities were those belonging to the Ministry of Works while laborers were rewarded with rice obtained from the Ministry of Agriculture (Fithen, 1999).⁸³ These political tycoons made substantial profit from mining ventures since capital inputs were those misappropriated from government ministries.

While rezoning of land for CCMS was economically beneficial to top APC stalwarts and their associates, it was of great cost to the ordinary miner who could not

⁸³ Informal interview with an elderly person in Yengema, Nimikoro Chiefdom.

afford the very high cost of participating in legal mining. Furthermore, the ordinary miner lacked the political connections to be an entrepreneur in the CCMS. The situation became critical for the ordinary man as diamond poaching was suppressed by the government paramilitary, the Internal Security Unit (ISU).⁸⁴ In order to continue their activity, miners and diggers had to join APC operations or use violence to protect illicit activities (Levin, 2006). Thus the CCMS program changed the balance of power in favor of APC party stalwarts while many ordinary miners were increasingly marginalized due to deprivation of access to alluvial mines (both legal and illicit mining).

Another area of reward to pro-APC political elites was the termination of the monopolistic export rights of Diamond Corporation DICOR, a subsidiary of DeBeers Central Selling Organization (CSO). Prior to the establishment of the CCMS all diamonds were exported directly to CSO in London. Stevens however, wanted to create more opportunities by which he could have access to international markets, an avenue for credits, and a conduit to foreign exchange for government and party clients (Fithen, 1999). He therefore relinquished DICOR's export monopoly and allowed private operators to export 20 percent of annual diamond production. Export licenses were granted to business personalities most of whom were Lebanese and Afro-Lebanese. APC's reform of the diamond sector through the creation of the NDMC, CCMS and export licenses to pro-APC private operators did increase the government's control over diamonds and aptly rewarded its clients, as part of its patron-client relations.

As the aforementioned discussion illustrates, the political economy of the diamond industry was firmly rooted in patrimonialism and kleptocracy in the 1970s

⁸⁴ The ISU was instituted in 1975 and consisted mainly of APC thugs who were ruthless in general and local elections suppressing those who were regarded as opposition to the government.

onwards. The diamond industry provided state revenues and was instrumental in attracting foreign investors and financial support from international financial institutions. However, corrupt politicians used these revenues as political and economic instruments to disempower rivals in a bid to meet their personal aspirations and patrimonial commitments (Levin, 2006; Reno, 1995). In fact, the repressive and autocratic rule of Stevens' led APC was cemented in 1978 when a one-party system of government was imposed. This facilitated patrimonialism *par excellence*. The situation was exacerbated by the 1980s when the state had started to collapse as a result of dwindling aid budgets, reclining revenues from official diamond mining and other economic ventures. Legitimate diamond trading dropped from more than two million carats in 1970 to 595,000 carats in 1980 and 48,000 carats in 1988 (Lightfoot-Boston, 2009).

Table 4.2 NDMC profits, dividends and taxes

Year	Sales (Le million)	Taxation (Le million)	Net Profit (Le million)	Dividends (Le million)
1971	19.4	4.8	2.3	1.0
1972	21.6	4.5	1.7	1.0
1973	36.5	14.4	5.4	5.2
1974	35.1	15.8	6.8	6.8
1975	36.6	13.9	5.4	5.4
1976	36.7	9.9	4.5	3.0
1977	29.8	4.9	4.0	0.0
1978	35.2	10.9	4.8	2.0
1979	47.6	14.9	6.9	2.0
1980	43.2	11.4	5.6	4.0
1981	42.0	5.1	2.8	0.0
1982	29.1	0.8	Loss (8.9)	0.0

Source: NDMC Annual Reports

As indicated in (Table 4.2), the NDMC (corporate production) was profitable to the government, the company and shareholders in the 1970s but by 1982 the company was running at a loss. Although depletion of deposits was a contributor, the major issue

for the dwindling official production was the sabotage of corporate mining by players of the informal diamond networks and shadow economy. Dwindling production by SLST led to the closure of some mines and laying off 1,500 workers in 1982.

In 1984, SLST's 49 percent share in NDMC was bought by the Precious Mineral Marketing Company (PMMC) owned by Sierra Leoneans. Thus NDMC became totally nationalized. It should be noted though that two of the major shareholders Messrs. Jamil Sahid Mohamed (Managing Director of PMMC) and Tony Yazbeck were of Lebanese descent and very close business associates of Stevens. While PMMC initially marketed ADMS diamonds, the buying of SLST's shares in NDMC widened the scope of diamonds it could market. Thus DICOWARF's mandate of buying 50 percent of NDMC's output was under threat (Golfa, 1989). PMMC therefore had greater control in marketing diamonds to international dealers mostly in Antwerp. From November 1984 to 1986, the company earned \$13.4 million from diamond sales, of which \$8million was paid to government. While this was encouraging for the government it was short-lived. Dwindling production, massive exploitation, shady deals, and mismanagement led to the demise of NDMC by the end of the 1980s.

Further, state functions were incapacitated and economic activities were embedded within informal diamond mining and marketing (Reno, 1995). In fact, diamonds aided black market activities that undermined state control of the economy in the 1980s. Price controls and overvaluation of exchange rates supported a thriving underground trade that involved diamond smuggling whose proceeds were used to purchase scarce essential imports (Davies, 2006). An informal market that was tightly controlled by Lebanese with the support of a few highly influential political figures in

government was very lucrative in the short run (Fithen, 1999). As Alao (1999) aptly puts it, “local politicians and resident Lebanese entrepreneurs have colluded with external business interests, petty criminals and other streetwise individuals to bypass official channels and smuggle the country’s diamonds.” The Lebanese businessmen were in an advantageous position due to banking connections in Beirut and support of some key politicians. They therefore began to establish their patronage networks by giving private loans. The growth of the Lebanese dominated informal network and corruption had worsened when Stevens retired in 1985 and was succeeded by his military head, Major General J.S. Momoh.

4.3.3 Diamond Management during J.S. Momoh's Leadership

With shrinking official revenue and the reluctance of international financial institutions (IFIs) to provide financial assistance, J.S. Momoh was faced with an uphill task: formalization of part of the diamond industry and concomitantly reducing a Lebanese-dominated informal sector⁸⁵. He therefore wanted investors whose business ventures would ensure that the government obtained revenues for the treasury. In 1986, an Israeli, Shaptai Kalmanowitch set up LIAT Company with considerable initial capital. The activities of LIAT were to the economic benefit of Momoh’s cash-trapped government as proceeds from diamonds entered the treasury, and part was used to honor IMF debts (Golfa, 1989; Reno, 1995). While some financial assistance was restored for development purposes, the APC government used most of it to support its patrimonial system. However, there was growing resentment amongst Lebanese and Sierra Leonean business elites because such changes adversely eroded their commercial pursuits. In order

⁸⁵ IFIs wanted a formalized system by which they can be assure that the government would meet its financial payments to these institutions.

to curtail informal economy activities, Momoh's government instituted the Public Emergency Economic Regulations (PEER) with draconian enforcement (Fithen, 1999; Zack-Williams 1999). It should be noted that actors normally devise strategies aimed at circumscribing official policies and this one was no exception. Some senior government officials and Lebanese traders continued their illicit commercial ventures in violation of PEER. Diamond smuggling was still a viable commercial activity as gems dug in Kono, Kenema, Bo, and Pujehun were bought in buying offices in Monrovia. In other words, "jumping scale" occurred when diamond dealers circumvented the official level of transaction (selling diamonds to the government GDO) and sold diamonds in Liberia thus modifying the balance of power in line with their economic agendas. Illicit diamond activities continued to provide foreign exchange for high-placed individuals at the expense of official diamond revenue. As of 1988, official diamond exports had dropped to \$22,000 while their contribution to GDP had dropped to less than 0.1 percent (Davies, 2008; Francis, 2001). The precipitous decline in official export earnings was a result of widespread corruption, smuggling and incapability of the government to effectively regulate the diamond industry (Kabia, 2008).

The government's steady flow of diamond revenue was put to a halt following the exit of Kalmanowitch.⁸⁶ Momoh's led APC government was again faced with what appeared to be an insurmountable task: maintaining financial flow while resisting the thriving informal sector. After a while another Israeli, Nir Guaz's SCIPA Company was established in Sierra Leone. This company assisted the government by importing essential commodities like rice and fuel through the formal channel. In order to enforce

⁸⁶ It was reported that Kalmanowitch was arrested by Interpol for alleged money laundering in one of his trips abroad.

formal economic activities, the APC launched PEER II to crack down on the informal economic sector and to ensure greater control of Kono diamond fields in particular. In practice, this did not bear fruition as collusion amongst officials of the Mines Ministry, NDMC officials and a few influential politicians led to the continuation and growth of extensive illicit mining. The situation was precarious for Momoh, as Guaz developed linkages with rivals to the president, thereby undermining presidential power (Fithen, 1999).

By the mid to late 1980s, the decline in official revenue was having a tremendously negative effect on the socio-economic conditions of most Sierra Leoneans. Per capita GDP growth was negative during this period. Essential commodities like rice and fuel were very scarce due to scarcity of foreign currency and price controls (Davies, 2000). Real wages for the public sector had dropped significantly while government services were almost grounded. In fact, a household income and household economic activity survey in 1989 indicated that 80 percent of Sierra Leoneans lived below the poverty line of \$1 a day and that poverty was more acute in the rural areas compared to urban areas (Davies, 2008). The political elite continued to amass wealth to the detriment of the ordinary people in particular and the country in general, worsening the socio-economic condition in the country (Boas, 2001; Reno, 1998). In fact, the World Development Report 1988, stated that Sierra Leone was one of the poorest countries in the world, with a GNP per capita of U.S. \$310 in 1986, an average life expectancy of only 41 years, with as many as 154 of every 1,000 infants dying every year before they reached their first birthday (World Bank, 1988). Furthermore, infrastructure had deteriorated.

As the precarious economic condition exacerbated, Momoh was advised by IMF officials to secure reputable companies to undertake diamond exploitation in Kono. Some American multi-nationals were discussing the possibilities of engaging in corporate mining. The informal diamond operation seriously affected Momoh's legitimacy. The government therefore agreed to launch a major crack down of illicit mining activities in Kono in 1990 in what was called 'Operation Clean Slate (Fithen, 1999). This resulted in the violent eviction of over 15,000 illicit diamond diggers (locally known as 'san-san boys') most of whom joined the rebel movement. Dispossessed from mining and with no other opportunity, these miners became aggrieved and most of them were the early recruits of the rebellious group, the Revolutionary United Front (RUF). As Hirsch (2001:28) notes, "a dismal pattern of official corruption, mismanagement, and electoral violence led over the years to deepening public cynicism, the virtual collapse of the education system, and the creation of a generation of young men and women who became the Revolutionary United Front's (RUF) rank and file".

4.4 Diamonds and the Civil War (1991-2002)

In this section, I examine how diamonds influenced Sierra Leone's civil war.⁸⁷ It shows how the government of Sierra Leone lost control over diamond exploitation and how diamonds fuelled violent conflicts. I discuss how various interested parties (actors) at the local, national, regional and global scales used diamonds during the civil war to satisfy their social, political and/or economic goals, thus prolonging the war. The section also investigates how power relations amongst actors created opportunities for some and constraints for other stakeholders. The section also discusses how actors utilized scale

⁸⁷ In March, 1991, about 200 armed men (the RUF and some Liberian and Burkinabe mercenaries) attacked the eastern border town of Bomaru in Kailahun District.

and networks to satisfy their political and/or economic agendas. In examining diamonds and civil war in Sierra Leone from a spatial perspective, I employ O'Lear and Diehl (2007: 168) notion of scale as an expression of spatiality by focusing on actors, spaces, and interactions with emphasis on how "a place and the processes unfolding there are connected to other places."

4.4.1 Principal Causes of the Civil War

While bad governance, appalling socio-economic conditions (including high unemployment and dissatisfaction and high poverty levels) were the major precipitants of the civil war, poor management of the diamond sector also contributed to the war in two ways. Firstly, the sharp disparity in economic benefits accrued from diamond mining resulted in frustration for the ordinary diamond digger. Informal financiers (supporters) of diamond mining often inflated mining expenditure.⁸⁸ Consequently, the percentage of the [remaining amount] net gains that was apportioned to diggers was quite low. A number of diamond diggers were aware that the prices they received for diamonds was far below their actual value and this, over time, resulted in accumulated grievances against local stakeholders at the upper end of the diamond chain.⁸⁹ As Richards (2001) notes,

"The rebel movement first recruited among the most thoroughly marginalized diggers working the "border-zone limbo-lands." Intimate with the processes through which the magic money sustaining national politics is made and angered by social marginalization, this secret army of gravel sifters was quick to heed the call."

⁸⁸ Supporters normally financed mining operations and feed the diggers on agreement that such expenses will be deducted when "winnings" are obtained. The remaining amount of money is shared based on the initial agreement.

⁸⁹ Interview with an influential elderly man in Koidu, March, 2008

While social and economic marginalization of diamond diggers may have triggered the civil war, perhaps the general neglect of diamondiferous communities was a broader scale of causation. As Alao (1999:46) argues, “first, and one which in turn had attendant ramifications, was the extent to which successive governments’ neglect of the welfare of the rural population, especially those living in the diamond-rich areas (the south-east) was a cause of the conflict.” Secondly, (as discussed in section 4.2) extensive illicit diamond mining and smuggling and undervaluation of exports significantly decreased fiscal revenue and contributed to a weak state (Keen, 2005). Thus mismanagement of diamonds was a contributor to the war; however, it played a more instrumental role in fuelling and prolonging the war.

4.4.2 RUF and its Sociospatial Network of Regional Allies and International Diamond Agents

During Sierra Leone’s civil war (1991 to 2002) several players were involved in the exploitation of the country’s diamonds to fulfill their social, political, and economic agendas. These actors operated at different levels – local, national, regional, global and utilized scales and networks within and across different levels to satisfy their interests. While it is indisputable that the Revolutionary United Front (RUF) and their regional and international allies (some neighboring countries and international business agents) were the main actors, others included the diamond organizations, diamond dealers, the national army and pro-government forces, private security firms, regional and international peacekeepers, and successive governments.

The RUF exploited local lawless spaces of diamond production that were linked to global spaces of consumption with the aid of a network of regional allies and international diamond agents (Zulu and Wilson, 2009). The rebellious group was

therefore able to circumvent the extant structure of a fragile state. Through the complex local-regional-global network, the RUF was able to sustain their war machinery after the initial year of fighting.⁹⁰ The RUF invaded and took control of the diamondiferous Kono District in 1992 but were temporarily ousted by the national army after some fierce battles. However, the RUF continuously occupied Kono and Tongo Field from 1994 until 1996, and from 1997 to 1999 they and the Armed Forces Revolutionary Council (AFRC) were in control of the diamondiferous areas of eastern Sierra Leone.⁹¹ During their occupation of diamondiferous areas, RUF performed various roles in the diamond chain: from miners, to dealers, and exporters. Abductees were ordered to mine extensively (which included residential areas) and handed over all diamonds to RUF officials at gun point.⁹² An interviewee revealed that RUF's controlled mining areas were mainly in central parts of Kono, which included Komani Park in Gbense Chiefdom, Number 11 in Kamara Chiefdom, and Nimikoro Chiefdom. Further, he states, "rebel leaders came for diamonds which they took to Liberia by road and footpaths".⁹³ RUF continued mining operations, facilitated by a sub-regional network of allies that include Liberia, Guinea, Ivory Coast, and The Gambia. Documentary evidence has also shown that conflict diamonds were handed over to Charles Taylor (the former president of Liberia) in exchange for arms, an RUF rebel base in Liberia, including Liberian and other mercenaries (Davies, 2000; Kabia, 2008). The accusation of Liberia and Cote d'Ivoire engaging in conflict diamonds is substantiated by the sharp discrepancies between the

⁹⁰ At the outset, RUF focused on a political motive, ousting the APC government and establish an egalitarian government; put economic motive soon gained momentum which political ambition dissipated (See Abdullah, 1997).

⁹¹ The diamondiferous areas occupied by RUF included Kono, Tongo Field in Kenema, and Kailahun District.

⁹² Interview with former RUF abductees, March 2008

⁹³ Ibid

quantity of diamonds produced and the sale of diamonds from these countries. For example, in 1997, Liberia exported 5,803,000 carats of diamonds to Belgium while that for Ivory Coast was 885, 000 carats. However, estimate of diamonds produced in Liberia was merely 150,000 carats and nil for Ivory Coast (Smillie et al. 2000). A further attestation to Liberia's involvement in conflict diamonds was the fact that sales of diamond export in 1988 was US\$ 8.4 million but rose astronomically to US\$ 500 million in 1995 when civil war was occurring in both Liberia and Sierra Leone (Smillie et al. 2000). It is documented that between 1994 and 1998 about 31 million carats, valued at US\$1.96 billion, were recorded in Belgium as originating from Liberia even though Liberia does not have the capacity to produce that quantity of diamonds (Smillie 2000).⁹⁴ While it is possible that other diamond tax evaders purportedly obtained diamonds from Liberia, it is highly probable that most of the so-called Liberia's export were conflict diamonds siphoned by the RUF.

There was also dissonance between Guinea's domestic production of diamonds and its exports. For instance, in 1997 it produced 205,000 carats of diamonds but exported 533,000 carats (Smillie et al., 2000). As diamond mining areas were mainly in the hands of rebels then, it is reasonable to suggest that the difference emanated from Sierra Leone. As of 1999, the rebels controlled 90% of Sierra Leone's diamond mining area. Though it is suggested that most of the proceeds from rebel diamond sales were in the hands of Charles Taylor, it is estimated that the rebel share of proceeds from diamond sales was between US\$7 and 20 million (Davies, 2000). The UN estimated that RUF annual exports were between \$25 and \$125 million.

⁹⁴ Liberia has the capacity to produce a maximum of 100,000 carats annually (c.f. Smillie et al., 2000).

RUF's arms-for-diamonds transactions were also fostered by a network of South African, American, and Eastern European companies and unscrupulous middlemen (Kabia, 2008).⁹⁵

In addition to funding the war effort, RUF top commanders acquired considerable wealth from conflict diamonds. A UN (2000) report accused the new RUF leader Issa Sesay of selling 8,000 carats of smuggled diamonds in Abidjan, Cote d'Ivoire. Senior RUF commanders were therefore reluctant in supporting peace accords implementation.

Sierra Leone's war time illicit diamond transactions were associated with small arms proliferation (UN, 2000). The UN Panel of Experts has catalogued the network of companies, individuals and states that participated in the arms-for-diamonds transactions. It is essential to note that this network had a global and regional dimension in which the former Liberian President was strongly accused of playing a key role.

4.4.3 Private Security Agencies, International Peacekeepers and Conflict Diamonds

During the war, successive governments reconfigured state security by assigning national security roles to territory-less private security companies. While governments used diamond proceeds to pay them, there were cases in which they were rewarded with mining rights to their associated mining companies (Kabia, 2008). The Gurkha Security Guard and the Executive Outcomes are examples of such companies. The NPRC junta hired Executive Outcomes, a South African mercenary firm. The Strasser led military government agreed that Executive Outcomes would receive \$1.5 million monthly (Alao, 1999). Part of the agreement also involved the granting of a mining lease to its associated mining arm, (Branch Energy Limited), a twenty-five year lease on a diamond

⁹⁵ In 2000 documents found in the residence of RUF leader Foday Sankoh showed a number of shady diamond deals he did with these companies.

mining concession (Ndumbe and Cole, 2005). President Kabbah sought the services of Sandline International, a British Private Military Company to provide logistic and intelligence support to ECOMOG for the ousting of the AFRC. It was agreed that Vancouver based business tycoon Rakesh Saxena provide Sandline with \$10 million for the importation of arms to oust the AFRC-RUF forces in return for mining concession (Africa Confidential, 1998; Alao, 1999).

International peacekeepers have also been accused of involvement in conflict diamond exploitation. ECOMOG troops were accused of exploiting Sierra Leone's diamonds. A United Nations Mission in Sierra Leone (UNAMSIL) Commander implicated some Nigerian ECOMOG officer when he noted that "the Nigerian army was interested in staying in Sierra Leone due to the massive benefits they were getting from the illegal diamond mining" (Jetley, 2001 cited in Kabia, 2008). Other evidence suggests that some Nigerian troops were involved in diamond mining in Sierra Leone. An interviewee who initially was abducted by the RUF revealed that they were mining for ECOMOG. Further, a former Nigerian Commander that was in charge of Kono had this to say (Adeshina, 2002: 143 cited in Kabia, 2008):

Most of the personnel of units deployed at Kono District except those located at Njaima Nimikoro were deeply involved in illegal mining of diamonds. Our boys forgot our main mission in Sierra Leone and opted for material gains due to the influence of the SLA soldiers. The allure of having a few gem stones in their pockets was too tempting to resist, especially as the only gratification to take back to Nigeria was a paltry \$150 as opposed to \$900 they often collect while on UN operations. This unprofessional attitude reduced their will to fight tremendously (Adeshina, 2002: 143 cited in Kabia, 2008).

4.4.4 International Diamond Organizations and Conflict Diamonds

Large scale international diamond organizations such as De Beers and the Diamond High Council (HRD) in Antwerp were the destination points of some of the conflict diamonds. These organizations were complacent in the rough diamond trade during the civil war. For instance, there was virtually no official export of Sierra Leone's diamond in 1998 as the RUF was in control. Amazingly, HRD in Antwerp, Belgium recorded 770,000 carats of diamond as originating in Sierra Leone (Smillie et al., 2000). What is of major concern is that HRD glossed over the fact that diamond imports to the world trading capital; Antwerp had no relation to the production capacities of their respective points of origin.

Although de Beers has vociferously denied the accusation, the continued pervasive purchase of 'loose' diamonds (until late 1999) with the ultimate aim to retain control of the market makes the denial questionable. Smillie (2001) has noted that anyone who had bought a single polished diamond in recent years was an unwitting and indirect participant because the diamond industry in general benefited from conflict diamonds.

4.4.5 Network of Local Actors, Spaces of Production and Conflict Diamonds

At the national level, diamonds resulted in the prolonged war on the side of the government as the army was accused of deliberately protracting and escalating the war to sustain private economic gains obtained from diamond mining. They were accused of selling arms to rebels, defecting in large numbers and attacking defenseless civilians rather than the rebels. Ghetto boys and the former illicit miners enlisted on either side with the primary aim of mining diamonds and looting. As a consequence, the soldiers were called *sobel*s- soldier rebels (Abraham, 2001; Hirsh, 2001; Keen, 2005). Pro-

government militias like the *Kamajor*⁹⁶ were also accused of engaging in mining and looting within the diamondiferous Tongo Field and the vicinity of Kenema. The diamond-rich Kono District and Tongo Fields changed occupancy a number of times when either side was taken by surprise by the other while mining. Abraham (1997) maintains that the unilateral ceasefire announced by the NPRC in 1993, which resulted in the regrouping of the routed rebels, justifies the general view that the NPRC was not willing to end the war.

The RUF was accused of receiving money from Lebanese entrepreneurs for permission to access mining sites. While many Lebanese license holders faced difficulties in accessing their mining sites during the civil war, many of them negotiated agreements with both sides in the conflict (Alao, 1999). Thus it was alleged that links between the rebels and Lebanese allowed the latter access to mining sites under RUF's control. While these allegations have been denied, they have some veracity as the reinstated government in 1998 revoked the diamond mining leases of some Lebanese in retaliation.

4.4.6 Conflict Diamond Exploitation: who Benefited, who Lost?

The continuation of this lucrative trade resulted in the further destabilization of the already weakened state machinery as the state lacked economic strength and political power as it could neither protect the siphoning of diamonds from its territory nor could it provide security and stability. Thus, the trade in Sierra Leone's blood diamonds was a global trade in which RUF and their West African allies created a market from which diamonds can be obtained for onward shipment to their European destinations. This was exemplified by the exploitation of Sierra Leone's diamond resource which was beneficial

⁹⁶ The Kamajor was a militia group organized by residents of the south and east of the country to defend their territories from RUF onslaught

to the external players especially the diamond conglomerates while the civilians continued to live in depredation, abject poverty and insecurity.

Struggles over diamonds during the civil war created opportunities for some actors (especially the RUF, unscrupulous diamond dealers, and rogue states) while the majority of Sierra Leoneans faced adverse constraints. Conflict diamonds were a blessing for the RUF whose annual diamond proceeds was at least \$25 million a year from 1997 when rebels controlled about 90% of the diamondiferous areas (Davies, 2008).

Diamonds were also beneficial to the buying centers at Antwerp who bought conflict diamonds from West African states whose quantity of exports far outweighed their annual production capacity. Liberia's war lord Charles Taylor and rogue businessmen who were allies to the RUF and facilitated their 'diamond-for-arms and drugs' transactions also benefited immensely from Sierra Leone diamonds. On the other hand, RUF control, exploitation and trading of conflict diamonds created severe economic constraints for the national government. Official diamond exports reached their lowest level during the peak years of the war. In 1998, government accounted for only 15,818 carats of diamond valued at \$1.78 million while in 1999; official production was 9,320 carats valued at \$1.24 million. Government annual war expenditure alone ranged from \$15-\$30 million between 1995 and 2000 (Davies, 2008). In fact, GDP growth during the war period was -2.2 percent while per capita income growth was -2.5 percent (Davies, 2007).

The resource curse was also manifested politically and socially. The country was not only politically unstable but for the most part the fragile government was only in control of Freetown. Perhaps, the social ramifications could be considered the greatest

manifestation of the resource curse at the national level. The resource war resulted in the death of over 75,000 civilians, more than 500,000 refugees, about 1.5 million internally displaced in addition to numerous rapes, amputations, abductions, and arson attacks (Smillie et al., 2000; Wilson, 2004; Zulu and Wilson, 2009).

4.4.7 End of Civil War

Concerted effort by ECOMOG, UNAMSIL, the British government, and the government of Sierra Leone led to the implementation of the Lomé Peace Accord and the cessation of hostilities in January 2002. Yet, it was the creation of a certification scheme for Sierra Leone diamonds, and the subsequently establishment of the Kimberley Process Certification Scheme (KPCS) that turned the balance in favor of the legitimate government (Grant, 2004; Maconachie and Binns, 2007). It blocked the flow of conflict diamonds that was the main instrument of support for the RUF. The Kimberley Process was fully established in January 2003 following a clarion call for boycott of diamonds by Western countries, thanks to the consumer campaign launched following media attention orchestrated by Global Witness and other NGOs under the umbrella of “Fatal Transaction.” A tripartite agreement involving the governments, diamond organizations and civil society called for the stemming of conflict diamonds (Grant, 2004; Paegas, 2005).

4.5 Diamond Management in Post-Conflict Sierra Leone

Post-conflict Sierra Leone has witnessed a dramatic increase in the number of international and local actors involved in the management and governance of the diamond sector. In addition to the strides made by the implementation and enforcement of the KPCS, the United States Agency for International Development (USAID), the UK

Department for International Development (DFID), the World Bank, and a consortium of diamond organizations under the umbrella of the Development Diamonds Initiatives (DDI) have been formulating programs, implementing projects, and drafting policies and reforms aimed at transforming diamonds from more of a curse for Sierra Leone to more of a blessing (Garret et al., 2008; Le Billon and Levin, 2008)⁹⁷. While the focus and levels of operation vary, the key goals are ensuring peace and enhancing development at the national and local levels. Peace has caused the reemergence of large-scale diamond mining companies engaging in prospecting, exploration and mining. While most of the diamond mining activities are guided by the 1996 Mines and Mineral Act, recent regulations include the 2003 Core Mining Policy, and the 2005 Artisanal and Small-Scale Mining Policy. In the case of industrial diamond mining, (for instance, Koidu Holdings Limited, formerly Branch Energy); individual agreements are signed between the specific company and the government of Sierra Leone (GOSL). The Ministry of Mineral Resources (MMR), the main institutional body responsible for mining has also been trying to ensure that mining is developmentally oriented. The emergence of civil society and advocacy groups like the National Advocacy Coalition of Extractives (NACE), and the Network Movement for Justice and Development's (NMJD) Campaign for Just Mining introduced new actors in the diamond sector. In the analysis that follows, I appraise the major diamond management mechanisms in relation to extant regulations to determine to what extent diamonds were a resource curse. How have scalar reconfigurations and power relations played out amongst actors at different levels? How

⁹⁷ During the period 1999 to 2007, USAID and DFID spent about \$15million on diamond reforms in Sierra Leone (Le Billon and Levin, 2009).

have the socio-spatial dynamics created opportunities for some and constraints for others?

4.5.1 Evaluation of the Kimberley Process and National Diamond Mining Regulations

Global governance of the diamond trade as exemplified by the KPCS has stymied the flow of conflict diamonds from Sierra Leone to a significant extent and has remarkably increased the state's official diamond export within an emergent sociospatial diamond reconfiguration. Official diamond exports which amounted to \$31.3 million at the onset of the civil war in 1992 and dropped to \$1.78 million at its lowest (1998-99), rose to \$41 million in 2002 (following the inception of the certificate of origin controls for Sierra Leone diamonds in 2000) and increased to \$141 million in 2007.⁹⁸ Official diamond export was 12 percent of GDP (estimated at \$240 per capita) in 2007 (IMF, 2009). Although these figures seem very encouraging and demonstrate the efficacy of the KPCS, yet the government's total mineral revenue is a significantly low fraction of exports. For instance, of the \$141 million worth of exports in 2007, the government of Sierra Leone received net revenues of \$5.19 million [mainly from royalties and export tax] (GDO 2009). Nevertheless, such revenue can be regarded as significant economic gains for the national government of a country undergoing post-war reconstruction. Furthermore, KPCS processes have led to slight improvement in government's regulatory capacity as it has been able to meet some of KPCS minimum requirements (including

⁹⁸ Diamond exports for 2008 dropped significantly to \$98 million due to the global credit crunch and the moratorium of kimberlite mining following the December 13, 2007 violent conflict. Koidu Holdings Limited (KHL) a South African based company failed to complete the housing project for people displaced by blast mining activities as stipulated in the concession agreement. In spite of repeated notices to local authorities, the mines ministry and senior politicians they continued blast mining without relocation. Hundreds of affected people of Koidu town demonstrated in front of the office of KHL chanting 'No Blast Mining' yet the company went ahead and blasted kimberlite dykes. Confrontation ensued between security forces and the crowd. Security forces responded by firing live bullets that led to the death of two youths while nine were injured.

data base and diamond export statistics and a temper-proof certificate of origin). Other national regulations that may have reduced illicit diamond exploitation and increased official diamond exports included the independent professional diamond evaluators, and the 2004 Mines and Minerals (Amendment) Act which stipulates “ a reward of 40 percent of the net proceeds of the precious minerals in connection with which the offence was committed shall be paid to any person who provided any information leading to the conviction of the offender” – sub-section 7 (Grant ,2005; PAC, 2006; GOSL, 2004).

Notwithstanding the gains made through the KPCS, numerous institutional, technological and human capacity challenges are evident at the national and perhaps more significantly at the local levels, thereby forestalling the maximum net national revenue that can be acquired from diamonds. One major impediment is that there is no verifiable audit trail for diamonds from the mine to the market (Grant, 2005; Smillie, 2001). In other words, there is no legal provision for dealer information on the certificate, and diamonds parcels are not linked to specific mines, thus they cannot be traced to the specific mining site. Other weaknesses include poor strategic government oversight, weak airport security, and the absence of a system to ‘check the checkers.’ In addition, government officials are few, receive very low salaries, and face logistical and structural impediments (PAC, 2004).⁹⁹ These persistent inadequacies resulted in diamond smuggling with a conservative estimate of (36.8 million) 21 percent, (IMF, 2005).¹⁰⁰ Industry insiders estimate that about 20 percent of the country’s diamonds sidestep official recording (Garrett et al., 2008). Rather than adhering to the local-national-global route for diamond marketing, illicit diamond dealers circumvent the national structures

⁹⁹ Interview with a senior mines official in Freetown also revealed these difficulties (July 2008).

¹⁰⁰ This estimate is similar to the 20% cited by a senior mines official interviewed in June 2008.

and regulations (marketing through the GDO in Freetown) and utilize the local-global conduit. Illicit dealers therefore 'jump scales' to fulfill their economic aspirations – evading national taxes and maximizing profit (Smith, 1992). The spatially dispersed nature of the resource and porous borders are also facilitators of smuggling. Furthermore, the KPCS emphasizes global-national linkages to stop conflict diamonds getting into the market but did not make provision for local socio-economic issues generally regarded as the principal precipitants for the outset of the civil war. These included economic exploitation, inequitable diamond revenue distribution, and poverty in Sierra Leone in general and more importantly in mining communities (Zulu and Wilson, 2009).

4.5.2 International Involvement: Addressing Economic Disparity and Poverty in Artisanal Mining Communities

International involvement in addressing economic disparity and poverty in artisanal mining communities included the Development Diamond Initiative (DDI). The DDI may be regarded as an outcrop of the KPCS, bringing together governments, NGOs, and the diamond industry with the primary aim of promoting development revolving around the miners and mining communities (Maconachie, 2009).¹⁰¹ As Smillie (2006: xii) aptly explains, "In the long run, better remuneration, better conditions and better alternatives are more likely to make a real difference in the artisanal mining sector than more rules, more antipathy and more peacekeeping". Although the DDI has formulated policies and programs geared towards 'fair trade' diamonds; (that include artisanal miners' cooperatives, the dynamics of diamond marketing and pricing), very modest economic achievements have been made at the community and household levels in mining areas. In fact, rural poverty levels are significantly higher in the diamondiferous

¹⁰¹ Its foundation members are De Beers, Global Witness, Partnership Africa Canada, diamond sector analyst Rapaport and the World Bank.

districts of Kono compared to the agricultural district of Pujehun (PAC, 2006). Thus while the DDI is laudable, the transformation of such rhetoric to reality remains an uphill task.

International efforts to address some of the shortcomings of the KPCS at local levels included a USAID sponsored Integrated Diamond Management Program (IDMP) and its Peace Diamond Alliance (PDA).¹⁰² The primary goal of the project was to formalize and rationalize artisanal diamond mining, and augment the benefits to miners and mining communities (Levin and Turay, 2008). PDA activities included the provision of funds for a credit schemes for miners, the purchasing of diamonds that were certified by the alliance which would be sold as fair trade diamonds, and provision of logistics (transport and communication equipment) to the MMR. The other activities included training of miners and diggers about the value of their production, and strengthening local institutions to be more democratic and truly representative of the community (Garret et al., 2008). Measures aimed at providing alternative modes of governance, poverty alleviation, and reduction of inequality in the artisanal mining sector were less satisfactory due to poor leadership, political squabbling and a drive towards consultant centralized control of decision-making (Le Billon and Levin, 2009). Although the USAID sponsored initiatives made modest gains in terms of logistics provision, training of miners and developing local institutions, the major aim of 'fair trade' diamonds and augmenting miners' income was not quite successful. The main goal of diamond cooperatives was to serve as the engine for market-led change, formalization, and miner empowerment (Levin and Turay, 2008). The intention was to reduce the number of

¹⁰² Management Systems International (MSI) was the consultant agency for both projects that covered the period September 1999 to December 2007. Diamond Policy and Management Project (DIPAM) was transformed to IDMP.

‘middle-men’ actors and establish a direct local-global linkage between miners and international buyers. USAID funds would have been used for a revolving loan scheme but an environmental assessment (EA) report inferred that the credit scheme was unworkable, so the project coordinators sought funding from two American investors to the tune of \$75,000 on the arrangement that they would buy ‘winnings’ from the cooperatives. Of thirty five registered cooperatives only five were funded. As of the 2005 mining season only 320 stones totaling 60.37 carats and valued at \$4,390 had been recovered. Due to the big loss for the two investors the project was cancelled. Nonetheless, it was socio-economically beneficial to a few diggers as it created employment, access to medical care, increased household income which was used for children’s education and in rehabilitation and construction of houses (Levin and Turay, 2008). Lack of proper prospecting of the land mined, undemocratic characteristics of cooperatives, corruption of executive members, and poor monitoring, were amongst the obstacles faced by the cooperatives project. It should be noted that while it had good intentions, it was a pilot based project with a very low spatial coverage and membership.¹⁰³ Though such projects are good in some respects, they are normally limited in extent and short-lived.

4.5.3 Transforming Sierra Leone’s Diamonds into ‘Diamonds for Development’

Another international donor driven venture is DFID’s effort in transforming the country’s diamonds to “diamonds for development.” DFID’s programs were centered on industrialization and macro-policy issues that included a fiscal transparency mechanism (Le Billon and Levin, 2009). DFID funded a presidential adviser on diamonds and an independent diamond valuator whose major duty was to oversee diamond exports. It has

¹⁰³ It was limited to five cooperatives in Kono only and each group had not more than 70 members.

provided funding (£2 million) to support management and institutional capacity of the government's MMR. The terms of the project include the provision of an expatriate Director of MMR, finalizing the new mineral act (enacted in 2009), and drafting mining reforms, and implementing a project geared towards civil service reform in MMR (NACE, 2009). DFID have been a major advocate of the Extractive Industry Transparency Initiative (EITI) agenda and plans to invest £16 million in reforming the National Revenue Authority (NRA). These are reform measures aimed at increasing transparency and accountability and attracting large scale investors in the mining sector. While these international-national linkages are useful for national economic development, unequal power relations are evident as host countries (e.g. Sierra Leone) cannot dictate the fundamental terms of such agreements. While there is need for the inclusion of pro-poor tax conditions for industrial companies that would increase government's revenue base, this is not included in DFID sponsored project. On the whole, DFID sponsored reforms have been helpful in creating a conducive investment climate.

4.5.4 Industrial Diamond Exploitation: an Engine of Economic Growth and Development?

The reemergence of large scale mining investors could be attributed to efforts of the international community (through the KPCS and other donor funded programs) in ensuring that some semblance of peace and stability was prevalent in Sierra Leone. The World Bank's interest in influencing and supporting mining-led development as an engine of economic growth and development was supportive of reforms aimed at creating a neo-liberal investing atmosphere. Though the 1996 Mines and Mineral Act remained the main legal mining instrument, the 2003 Core Mineral Policy (CMP) designed by the

government in conjunction with DFID and the World Bank is investor friendly (GOSL, 2003). Section 1.2 of the policy reads:

The new Core Mineral Policy (CMP) of the Government of Sierra Leone has been designed to create an internationally competitive and investor-friendly business environment in the mining sector. The policy is expected to assist the mining industry in attracting foreign and local private sector funds and to provide benefits and protection for the people and the environment of Sierra Leone. The policy will provide an enabling legal and fiscal regime for all mining operations from large-scale mines to the small artisanal gold and diamond mines in the provinces”.

The growth of diamond companies engaged in prospecting, exploration and mining of diamonds in post-civil war Sierra Leone are signs of national economic recovery and potential for development. As of 2007, the MMR issued 22 diamond prospecting licenses, and 35 exploration licenses. African Minerals Company, for example, owns 8 prospecting licenses covering 26,000 square kilometers. In all there were 35 small scale mining companies engaged in alluvial mining, and 5 large scale mining companies (Mansaray, 2008). The Koidu Holdings Limited (KHL), the largest diamond company is mining kimberlite diamonds in Koidu, Tankoro Chiefdom in the Kono District.¹⁰⁴ The operations of KHL are guided by two agreements with the government of Sierra Leone: the 1995 mining lease agreement and the 2006 ‘profit sharing agreement (NACE 2009).¹⁰⁵ Economically, the activities of these companies especially KHL can be regarded as a resource blessing for the country. KHL total payment to the national government in 2004 was \$1.63 million while payment for 2005,

¹⁰⁴ KHL holds prospecting license for kimberlite pipes in Lower Bambara Chiefdom in Kenema District, eastern Sierra Leone.

¹⁰⁵ The 1995 agreement is the basic legal framework for KHL operations. Amongst other things it stipulates that the duration of the lease is 25 years.

2006, and 2007 were \$2.42 million, \$2.67 million, and \$3.22 million respectively.¹⁰⁶

From the period 2004 to 2007, the company has paid a total of \$9.97 million to the GOSL. It is expected that payments to the GOSL would increase substantially once KHL starts to make profit in 2011. The 2006 profit sharing agreement stipulates that GOSL would receive 10 percent of KHL's profit while Kono District would be paid 10 percent of it also. As to whether the mining activities of KHL are an economic blessing to diamondiferous communities is open to debate. The company's monthly expenditure on its 600 local workers (whose average monthly salary is the equivalent of \$250 and lowest salary is \$130) is \$300,000. It also pays 0.1 percent of diamond sales to the Agricultural Development Fund (ADF) and DACDF payment (0.75 percent of the 3 percent export tax). Furthermore, KHL pays annual surface rent to chiefdom authorities (NACE 2009).¹⁰⁷ In 2007 surface rent paid to Tankoro Chiefdom amounted to \$29,300 (JJCR 2008). It is believed that the income paid to workers has transformed local economies. Monies paid to chiefdom authorities should also be used to enhance socio-economic conditions in diamond mining areas. In the discussion that follows the DACDF is critically examined to determine its contribution to community development in mining areas.

4.5.5 Rescaling Management of Diamond Revenue: The DACDF in Community Development

Rescaling management of diamond funds from the national to the local community level may improve its utilization. Within the purview of the Ministry of Mineral Resources (MMR), the Sierra Leone government established the DACDF in December 2001. It was agreed that 25 percent of revenue obtained from diamond export

¹⁰⁶ These payments were about 11% of the value of KHL production.

¹⁰⁷ Interview with a prominent paramount chief in Koidu, June 2008

taxes should be deposited in the fund meant for the development of mining communities. International donor agreed to provide matching fund to the DACDF for sustained social and infrastructural development in mining communities 'whose environment have borne the brunt of decades of [artisanal] mining.' DACDF adopts a participatory system in which local actors can exercise their natural resource management responsibilities and decision-making power (Maconachie, 2009). As of 2007, 54 chiefdoms with a total of 2,313 licenses are benefiting from the fund. For the period 2001 to 2004 the total amount government paid out to mining communities was \$1,923,000 with almost \$850,000 for 2004 (MMR, 2008). In 2005, more than \$900,000 was disbursed to diamondiferous chiefdoms.¹⁰⁸ DACDF generated approximately, \$4.5 million during the period 2002 to 2007 (Temple, 2008). The criteria for apportionment of funds is centered on the number of licenses issued in chiefdom and the value of diamonds extracted. The amount to each chiefdom is disbursed twice yearly to the chiefdom development committee. The committee comprises the paramount chief who is the chair, representatives from local governments and the community (NACE, 2009). Based on the gradual decentralization of power to local governments (following the 2004 Local Government Act and Local Council Elections), district councils receive 15 percent of the fund and town council gets 5 percent. In chiefdoms without town councils, the district council receives 20 percent of DACDF. Proponents of DACDF believe that the chiefdom has personal interest in combating illegal mining and smuggling since increase in legal revenues implies increase in chiefdom allocation. The fund have been adequately used by some chiefdoms for local development such as infrastructure projects (including schools, health centers and roads), agriculture projects and skills training programs (Temple, 2005). Funds were effectively

¹⁰⁸ As of 2007, mining companies paid \$885, 561 to the DACDF.

used to rehabilitate the Native Administration police quarters in Kayima, Sandor Chiefdom as well as the rehabilitation of the community center at Paguma in the Lower Bambara Chiefdom, Kenema District (Maconachie, 2009). Thus there has been some improvement of social infrastructures in diamondiferous chiefdoms.

Notwithstanding the gains made, the DACDF has been fraught with problems due to poor governance at the local and community level. In 2004, the Government of Sierra Leone High Level Diamond Steering Committee raised concern about the level of transparency, community awareness and local involvement in decision-making in regard to the use of the DACDF (Maconachie, 2009). In finding strategies to enhance transparency the GOSL in 2006 decided to channel DACDF funds through the elected district council instead of disbursing them through the paramount chief of the chiefdom (Temple, 2008).¹⁰⁹ While decision making is the collective responsibility of Chiefdom Development Committees (CDCs), they are normally dominated by traditional elites (paramount, section and town chiefs). Chiefs wield considerable power in decision making and this has stifled the conception of local ownership of funds and democratic process in the use of the funds. Unequal power relations between chiefs and other groups have resulted in the marginalization of stakeholders such as women and youths. Effective management of DACDF for community development was also thwarted by corruption (especially at the initial years of disbursement) in which some funds got missing. Other impediments for its effective utilization include cronyism with the award on projects based on personal connections with the chief, not focusing on urgent community needs, and the non-alignment of projects with broader development plans at local/community level (NACE, 2009).

¹⁰⁹ That was just an experiment, but the CDC is the major recipient of chiefdoms' DACDF.

4.5.6 Sociospatial Dynamics surrounding Artisanal Mining

Mining advocacy NGOs like the NMJD and NACE have been instrumental in advocating a 'rights-based' approach to the issue of mining. These groups have utilized global-local and at times global-national-local linkages to design legislations and measures aimed at a more transparent and socially responsible mining industry (PAC, 2006). While their action is primarily focused on reviewing mining policies geared to better mining agreements between large scale mining companies and governments that would be more beneficial to the state and mining communities in particular, very little if any have been done to reconfigure the socio-spatial dynamics surrounding artisanal mining in local communities. In other words, significant unequal power relations between mining financiers (supporters most of whom are dealers and/or exporters) and diamond diggers/miners that were evident before the civil war are prevalent.

Thus diamond diggers are still economically exploited as many of them earn less than \$1 a day while mining financiers (especially diamond dealers make 100 to 200 percent profit on big stones (Levin and Gberie, 2006). Diggers maintain that they receive less than 10 percent of the value of diamonds found and that if they refuse the "inhuman price" the master sells it openly at an undervalued price, paying a third to the gang of diggers and two-thirds to himself. Later on the master returns to the dealer (the buyer) and quietly collects the rest of the gem's real value (PAC, 2008). In defense of such assertion, the masters say diggers are 'dishonest' as they steal diamonds. Further, masters opined that their expenditure of diggers is high and that profit is low due to few winnings. In fact, some diggers are even worse off economically as the increase cost of mining deep deposits and the rarity of big finds reduces their share of net profit as the financier has to

deduct mining expenses that may be exaggerated prior to distribution of benefits to diggers, license holder/miner, and financier. Thus from an economic perspective, post-war reforms have not really transformed the earning capacity of diamond diggers and implicitly their household income derived from artisanal mining. For the most part, artisanal diamond mining is still a resource curse to the ordinary diggers and their families in diamondiferous communities.

Diamond dealers and exporters make astronomical profit in Sierra Leone's diamond industry as illustrated by Levin and Gberie's work (2006). The average cost of investment in a diamond mining project is estimated at \$20, 000 per year and about 2,400 mining sites were licensed in 2005. Since licenses can cover a maximum of five acres, then estimates of total expenditure on license mining in 2005 is about \$12 million, for an average acreage of 2.5 acres. Compared to the export value of \$116 million for artisanally mined diamonds in 2005, this is a small investment even if another \$6 to 10 million is factored in as informal payment ('envelopes'). If we include the informal payment, total expenditure is approximately 15 percent of the international market value of Sierra Leone's artisanal diamonds produced in 2005 and conforms to Even-Zohar's estimation as of 2003. While these are estimates, the similarity in conclusive evidence tends to suggest and perhaps affirm that artisanal diamonds in particular is more of a resource curse than a blessing to the junior actors while external players and a few internal ones reap substantial benefit.

4.5.7 Environmental Impact of Diamond Mining

While the social and economic dimensions of diamonds as a resource curse have been widely examined, one area that has been given superficial attention by the numerous

diamond reforms is environmental management of mining communities. The Foundation for Environmental Security and Sustainability is an international agency that primarily focuses on rehabilitating mine out areas by local residents. Other 'reform actors' have not adequately addressed this segment of the resource curse, a pivotal arm of rural livelihoods that are land-based (agriculture and forestry). It is ironical to note that while post-colonial mining regulations have clauses related to sound environmental practices, implementation of such rules are non-existent. The 1996 Mines and Mineral Act, the 2003 Mines and Mineral Policy and the 2005 Artisanal and Small-Scale Mining Policy indicate that mining should be done in an environmentally sustainable manner and that mining should result in sustainable development. The 1996 Mines and Mineral Act indicates that the Minister of Mineral Resources "shall take into account the need to conserve the natural resources in, or the land over which the mineral right is sought, or in the neighborhood land" in arriving at a decision as to "whether or not to grant a mineral right" (GOSL, 1996). Yet this clause at it very best has been given minimal consideration. While payment for artisanal mining licenses include a rehabilitation fee of 200,000 leones (~\$67) virtually nothing has been done to reclaim, rehabilitate, and reforest artisanal mine out areas. Large scale companies are required to reclaim and rehabilitate land but this is yet to be seen. The major issue at hand is that mining (both artisanal and industrial) is largely unregulated. As a consequence, an estimated 80,000 to 120,000 hectares of mine out land has been created with close to zero reclamation (PAC, 2005).

In summary, post-conflict Sierra Leone has witnessed a transformation of diamond management with some positive outcomes while numerous challenges remain.

The greater involvement of international donor agencies in funding diamond reform projects aimed at transformation 'conflict' diamonds to development diamonds have helped in improving official export and the economic gains at the national level. Official export revolves around \$140 million and is expected to rise when prospecting and exploration companies start full scale mining. Furthermore, government's 10 percent share of revenue from KHL would result in dramatic increase in official revenue.

Global-local linkage in diamond management has also been demonstrated by the activities of USAID in formalizing artisanal mining, improving the conditions of miners and empowering diamond mining communities. Attempts at establishing artisanal mining cooperatives to ensure 'fair trade' diamonds through a local-global diamond chain (mine-to- export) proved futile. However, modest gains were made in increasing awareness and empowerment of mining communities. The advocacy role of the NMJD and NACE in 'pressuring' governments and leading mining companies in the areas of justice and development has also yielded some dividends.

A major rescaling approach in the disbursement and utilization of diamond revenue is the creation of a community-based management of the DACDF. Its contribution to infrastructure development and general community development has shown (though modestly) that mining can contribute to community development thus reducing the degree of resource curse in mining communities. However, economic, social and environmental dimensions of the resource curse are still evident in mining communities.

4.6 Conclusion

This chapter has assessed diamond exploitation in Sierra Leone over four political epochs in order to determine the extent to which this resource accelerated or decelerated

development aspirations. It has shown that for the most part diamond exploitation fostered national economic growth and development during the colonial period and the initial years of independence. However, the politicization of diamonds during Stevens' patrimonial and kleptocratic rule witnessed the growth of informal mining and receding of formal mining resulting in socioeconomic decline at the national and mining community level. The manifestation of the resource curse culminated in a civil war during which war protagonists and external players benefited immensely while the majority of Sierra Leoneans bore the socioeconomic and political costs. The chapter has also demonstrated that the GOSL has been benefiting from diamond exploitation in post-war years due to improved regulations; however, not much gain has been made in enhancing the socioeconomic and environmental conditions in mining communities.

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**DIAMONDS, A RESOURCE CURSE? THE CASE OF KONO DISTRICT
IN SIERRA LEONE**

VOLUME II

By

Sigismond Ayodele Wilson

A Dissertation

**Submitted to
Michigan State University
in partial fulfillment of the requirements
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DOCTOR OF PHILOSOPHY

Geography

2010

CHAPTER 5: SOCIOECONOMIC DYNAMICS OF DIAMONDS AS A RESOURCE CURSE IN KONO DISTRICT

5.1 Introduction

Kono District has been regarded as the economic ‘breadbasket’ of Sierra Leone as it accounts for about 60 percent of the country’s annual diamond production, yet the district has faced a number of sociopolitical and economic challenges.¹¹⁰ Diamond deposits are located in the central and western parts of the district covering six of the fourteen chiefdoms (Figure 5.1). As a result of local political pressure, the growth of illicit mining leading to decline in company’s production and government’s revenue, artisanal and small scale mining was introduced in 1956. Yet illicit diamond exploitation (which was more beneficial to Lebanese and other foreign financiers and local chiefs), persisted in Kono during the colonial era. A short while after independence, the situation got worse during Siaka Stevens’ patrimonial rule. During his reign corporate mining was undermined; chiefs’ power was reduced following the centralization of diamond control while party stalwarts gained immensely (Akiwumi, 2006; Fithen, 1999; Reno, 1995). Widespread discontent, social injustice and abject poverty amidst plenty culminated the civil war. For the most part, exploitation of Kono’s diamond fields by the various protagonists (particularly RUF) fuelled and prolonged the war (Davies, 2000; Kabia, 2008; Silberfein, 2005; Zulu and Wilson, 2009). Since the end of the civil war, attempts have been made to enhance development in the district, yet it is faced with a number of sociopolitical, economic and environmental challenges.

¹¹⁰ The exception to this was during the civil war period (1991-2002) when for the most part the RUF was in control of the diamondiferous areas of Kono District, and virtually no diamond revenues went to the central government.

The primary purpose of this chapter is to evaluate the extent to which diamond mining and trading constitute a resource curse. This will be achieved by addressing hypotheses two and three. First, the chapter would examine how diverse social actors at local, national and international scales have taken advantage of the weak regulatory state apparatus in Sierra Leone to exploit diamonds in ways that turned a rich endowment of a rare, portable, precious mineral more into a curse than a blessing as exemplified by Kono District. This would be achieved by examining the sociospatial dynamics of diamond exploitation in Kono District under the following dimensions: illicit diamond mining and marketing; socioeconomic conditions and economic disparity; and contemporary conflicts over diamonds. In other words, it would illuminate how space and scale serve as an avenue through which power and politics of scale are expressed in interactions among diverse actors. Second, the chapter will assess how geographically diffused and remotely-located, but highly valuable natural resources are more of a liability than an asset. In other words, it would examine the spatial geography of diamonds (alluvial and kimberlite diamonds) in relation to illicit diamond mining and trading (smuggling).

The organization of the chapter is as follows. Section 5.2 discusses how a weak regulatory state and sociopolitical relations amongst and between actors have resulted in illicit diamond exploitation. It also underlines how various stakeholders (actors) utilized scale to satisfying their economic and sociopolitical agendas. The section also discusses possible solutions that could minimize illicit diamond exploitation and lead to the enhancement of mineral revenue for national economic growth and development.

Section 5.3 examines socioeconomic conditions and economic disparity in the diamondiferous areas. It examines how various actors with similar or different interests utilized networks and particular scales of operation in diamond extraction and marketing. The section investigates the power relations surrounding access and control over diamond mining land, access to labor, gender relations and the resource curse, access to capital, trends in household artisanal mining production, social relations and diamond marketing, and the degree of economic disparity among key actors.

Section 5.4 assesses contemporary diamond-driven conflicts in the district. It discusses mining communities and traditional leader's conflict; corporation-community conflicts, miner/supporter – diggers' conflicts, and conflicts amongst diamond diggers. It also examines how the various conflicts are manifested. These conflicts have social and economic implications as they can be violent and can therefore hinder mining activities.

Section 5.5 examines the spatial geography of diamonds (alluvial and kimberlite diamonds) in relation to illicit diamond mining and trading (smuggling).

In this chapter, attention is drawn to the role of the major actors that operate at different spatial levels and how interaction amongst and between them creates conditions that minimize or accentuate the dimensions of the resource curse at the community level. The role of structure, power and agency and the social production of scale are utilized in the analysis. In other words, the regulatory power of the state, the power relations amongst actors and the agency of actors are central to the discussion.

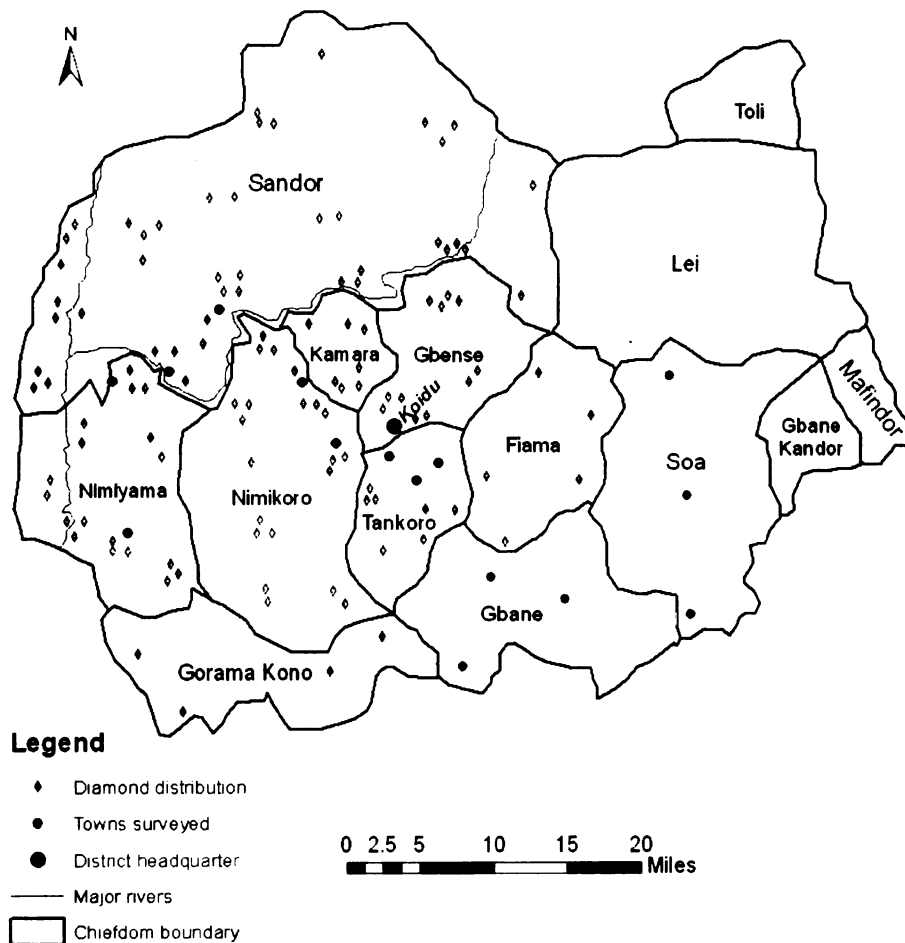


Figure 5.1 Study sites and diamond concentration in Kono District

5.2. Challenges to Diamonds for Development Concept: Illicit Diamond Exploitation

5.2.1 Illicit Diamond Mining

Social relations and networks are essential for illicit diamond mining. In general there are two types of illegal mining: “overkicking” and “ghado.” Overkicking involves the sieving of old gravels with the purpose of obtaining diamond residues that may have

been left during earlier extractions.¹¹¹ Ghado mining involves a group of 3 or 4 often-related diggers who mine unlicensed plots, companies' land, or in few instances, seek permission from landowners who may have paid surface rent to traditional authorities but whose plots are not fully licensed. In some cases landowners do not even pay surface rent but encourage ghado miners on the understanding that the landowner would receive 30 percent of the diamond winnings.¹¹² Essentially, ghado mining is facilitated by a network of illegal miners, land owners and the collusion of traditional leaders and mines monitoring officials. Social networks therefore play a key role in illicit diamond mining.

Power and agency situate politics in artisanal diamond exploitation in reciprocal relations of domination and marginalization, dependency and autonomy, where even diggers have agency to foster their economic interests. As a result of domination and marginalization of diggers by supporters, some diggers break away from the 'supporter system' (a system in which an investor/financier provides financial support for a mining project as well as some welfare services for diggers) and create a spatial scale for independent illegal diamond mining activities.¹¹³ The new scalar arrangement for illicit mining includes a network of actors at the chiefdom and district levels whose intent is to satisfy their economic agendas. These include traditional authorities (especially chiefs), mines officials and illegal miners/diggers. It is estimated that 45,000 illegal diggers/miners were in Kono District compared to the estimated 22,500 legal diggers (Moyer, 2003). If these are reliable estimates then illegal artisanal mining must be contributing significantly to the local economy. In order to ensure continuity of their

¹¹¹ Though artisanal diamond mining is considered a male dominated activity, a number of women participate in 'overkicking' for diamonds. This was the general view of key informants and was also re-echoed by focus groups.

¹¹² Information revealed during focus group discussion in Sandor Chiefdom.

¹¹³ Perceptions of focus groups of illegal diggers in Waidallah, Sandor Chiefdom.

activities, illegal miners/diggers generally maintain reciprocal social relations with landowners. Apart from giving landowners part of the sales from illegal diamonds, they also give them ‘gifts’ periodically in order to ensure continuity of access and utilization of mining plots.¹¹⁴ Illicit diggers/miners and their supporters normally provide some ‘assistance’ to mines monitors and wardens in the form of cash, transportation and other kind gestures. As a result some mines officials find it difficult to stop their ‘associates’ from mining illegally. Strong and cordial relationship between illegal miners, landowners, and government mines officials are therefore essential.

Illicit diamond mining was mainly driven by economic constraints, corruption and economic incentives. The 2005 Artisanal and Small Scale Mining Policy stipulates that artisanal miners should pay a total of 600,000 leones (about \$ 200) as annual mining license fees (which include surface rent, licensing, monitoring, and rehabilitation fees) and 96,000 leones (about \$32) as standard assessment income tax (MMR, 2008a). However, the numerous ‘handshakes’ made to mines officials and traditional leaders to expedite the process may triple the cost.¹¹⁵ Findings revealed that prohibitive fees were the primary trigger of illegal diamond mining. Respondents (68.4 %) demonstrated that license fees were expensive and therefore not affordable by many. Various interviewees echoed the issue of high license fees. A town chief had this to say:

“There is too much money involved in obtaining a mining license. You not only pay official license fees, surface rent and development fund, but you have to give numerous ‘handshakes’. You end up spending three times the official amount; so how can those who cannot afford obtain license?”

¹¹⁴ These gifts include cash, food items, and occasionally textiles.

¹¹⁵ ‘Handshakes’ are bribes paid to officials.

A female license holder maintained that she and her husband spent a total of 2 million leones (about \$667) to obtain a license for a mining plot. She said: “you have to give ‘handshakes’ to every official involved in the processing of the mining license but the bulk of the money is paid to mines officials.”¹¹⁶ Furthermore, chiefs used their sociopolitical influence at the local scale to perpetuate illegal mining and acquire economic benefits. Mineral laws require that a potential miner should pay annual surface rent of 100,000 leones (~\$33) per acre to the chiefdom prior to the issuance of licenses. Since chiefs benefit economically from surface rent, some of them protect unlicensed miners as long as they have paid surface rent with some additional ‘handshake.’ In order to fulfill their economic goals – maximizing the amount of surface rent received, chiefs operated within legal and illegal channels.

Illicit diamond mining was also facilitated by the corrupt practices of government mines officials operating at the mining community level. Mines monitors, wardens and superintendents who should enforce the law pertaining to mining licenses that would generate more official revenue for the district, the chiefdoms and the country, utilized their administrative and regulatory power for personal economic gain, thus depriving those political/administrative units of revenues. Mines wardens’ responsibilities included the demarcation of mining plots, recommendation of the issuance of a license, and the power to arrest law breakers. Yet some of them have been accused of creating scalar arrangements for personal economic gains. Such tactics included striking deals with illegal miners and dealers at the local level and of charging extra for licenses. A general consensus amongst diggers’ focus group was that government mines monitors and mines wardens, and the local landowners knew about their illegal mining activities. Some of

¹¹⁶ Interview with a female license holder in Masabendu, Nimiya Chiefdom, April 2008.

them affirmed that those mining officials sought wealth. Therefore when these officials arrested illegal diggers they receive bribes in return for release. They were then able to continue their illegal mining activities. Thus corruption was a major cause of illicit mining.

However, a closer analysis has demonstrated that government mines officials were not necessarily inherently corrupt but that poor salaries for mines officials responsible for monitoring such a supposedly lucrative business may have led to the acceptance of bribes. A number of mines monitors and wardens indicated that they received very low monthly salaries ranging from \$50 to \$100. Thus some government mines monitoring officials may have been tempted to accept bribes through which they obtained additional money to maintain their families.¹¹⁷ Thus the prevailing economic conditions and the social responsibility of mines officials were the main reasons why they were engaged in corrupt practices.

Lack of social connections to chiefs can also hinder a miner's chance of obtaining a license. Some respondents (12 %) believed that some people resorted to illegal mining because the mining process was unfair, as those who lack political and social connections did not obtain a license. A license holder posited that social connections were useful in obtaining licenses as people that had connections were allocated several mining plots while those without them found it very difficult to obtain even a single plot.¹¹⁸ Thus social connections to chiefs and mines authorities also adulterated equity in obtaining mining licenses.

¹¹⁷ As of 2007, the average salary of mines monitors was \$65 (Rapaport Diamond Report Special Edition, 2007).

¹¹⁸ Interview with a female license holder in Yengema, Nimikoro Chiefdom, April 2008

Illicit diamond mining was also driven by the government's limited capacity to enforce mining regulations. Social actors capitalized on the weak institutional and human capacity of the national mines ministry and engaged in illegal/illicit diamond mining. Some respondents (6.8 %) disclosed that paucity of mines monitors and wardens have facilitated illegal mining. Interviews also revealed that lack of capacity to monitor mines was a cause of illicit/illegal diamond mining in Kono District. A mines monitor noted that there were only sixty-four mines monitor to cover the entire diamondiferous stretch of about 2,800 square kilometer (43.75 square kilometers each). He stated that on average each monitor oversees 100 miners/diggers with very limited security provided. Furthermore, they were not provided with the necessary logistics to perform their duties. There were no motor bikes for mines monitors and only few mines wardens had Global Positioning System (GPS) units to aid in the demarcation of mining plots. He noted that most of them had to walk 15 to 20 miles daily to cover mining sites. Thus illicit mining was triggered by weak institutional capacity, lack of logistics and human capacity.

While there was a general consensus about the prevalence of illegal mining, there were temporal variations in the level of illegal diamond mining. A majority of respondents (65.3 %) said that illegal mining was high prior to the civil war, 32.5 percent believed it was moderate while only 2.2 percent said that it was low. During the civil war period, most respondents (88.7 %) suggested that illicit mining was high, 8.7 percent said it was moderate, while 2.6 percent believed it was low. Compared to the civil war period, most respondents said that as of 2008 illegal mining had declined. Of these, 10.7 percent believed it was high, 47.4 percent said it was moderate while 41.9 percent said it was low. In short, the degree of illegal mining was generally considered high in pre-war

period, substantially escalated during the civil war, and had declined as of 2008.

According to the Integrated Diamond Management Program (IPMP) illicit diamond mining had declined (USAID, 2007). As is the case of household responses, the general opinion of most key informants was that illegal mining had declined. A senior mines official believed that the ratio of legal to illegal mining is 80:20. A mines monitor estimated it at 75:25, while a senior mines warden said it is 70:30. Nevertheless, a majority of respondents (63.4%) indicated that illicit diamond mining was a big problem in the district. According to the MMR (2008b), artisanal mining revenue for 2006 amounted to \$406,800. This was about 80 percent of the total revenue that should have been obtained. Therefore, the country lost at least \$101,700 from artisanal mining licenses alone. Since Kono accounted for 60 percent of artisanal diamonds, revenue lost from the issuance of licenses in Kono District was about \$61, 020. Thus, even though illicit mining may have declined it was still a cause for concern.

Nevertheless, diamond reforms and collaborative efforts by various parties have contributed to a decline in illegal diamond mining. Respondents maintained that the reduction in illegal mining over the past five years could be attributed to growth in mining companies (34.8 %),¹¹⁹ slight improvement in mines monitoring (27.4 %), and some degree of equity in acquiring mining license (23.4 %). The government of post-conflict Sierra Leone has been using its authority and the 2003 Core Mining Policy to encourage the growth of corporate mining entities so as to increase output and revenue generation, and reduce (illicit) artisanal mining. As of 2007 it was estimated that 94% of artisanal mining areas had been assigned to mining companies for prospecting,

¹¹⁹ Some illicit mining takes place in companies' concession areas. However, increasing security presence is reducing the chances and increasing the risk of clandestine mining activities in corporate sites.

exploration, and mining (Le Billon and Levin, 2009). A case in point is the African Minerals (formerly Sierra Leone Diamond Company) whose mining concession area is 162.3 square kilometer in Nimiyama Chiefdom, Kono District (MMR 2008b).¹²⁰ The scenario is somewhat different in Ghana where the diamond output of the Ghana Consolidated Diamonds, Ltd (GCD) compared to artisanal production has declined from 99 percent in 1980 to 30 percent in 1999 (Yelpaala and Ali 2005).

A reconfiguration of the scalar arrangements of monitoring has produced favorable economic outcomes for mining communities and the central government. In recent years, mining monitoring has involved joint effort between government mines monitors and newly appointed chiefdom monitors. This joint monitoring arrangement has produced better economic outcomes. Financial returns to diamondiferous chiefdoms, following the establishment of the Diamond Area Community Development Fund (DACDF), are based on the number of licenses issued, the quantity of legal exports, and added reward for special stones (MMR 2008c). As a consequence, chiefdom monitors (appointed by traditional leaders) exercised their authority in ensuring that mining was done through legal channels in order to boost chiefdoms' share of revenue. Thus by including the services of local monitors and the economic incentives for mining chiefdoms, illegal diamond mining has declined.

The introduction of a mining cadastral system (the registration of land indicating precise location, boundaries, dimension, and tenure) in Kono District in 2005 was also another effort to reduce illegal mining. It was hoped that the cadastre system would facilitate effective monitoring (DDI, 2008). This system would also facilitate the

¹²⁰ Other companies that have mining concessions in Kono District and other diamondiferous areas in Sierra Leone include Basama Diamonds Limited, Koidu Holdings Limited and Milestone Trading Limited.

collection of annual statistical data about the number of active licenses, total fees collected and can be used to detect discrepancies where annual reports or fees have not been received (GOSL, 2008).

Government's effort to improve legal diamond mining would require insights from local actors (miners, diggers, chiefs) as well as other stakeholders. Respondents highlighted major ways of increasing legal diamond mining. The biggest response (47.9 %) was that government should lower license fees. A number of interviewees believed that affordable mining fees would encourage more people to mine legally.¹²¹ Survey respondents (37.9%) suggested that for illicit mining to be reduced there should be equity in land allocation for mining and in securing a mining license. In fact, miners' focus groups pointed out that mining authorities should stop the preferential allocation of licenses to foreigners. The enthusiasm of chiefs and mining officials in apportioning land and mining licenses to foreigners was predicated on the rapacious rent-seeking interests of officials as the former, unlike the native Sierra Leone, gave stronger 'handshakes.' An overwhelming number of key informants indicated that mining monitoring capacity needed considerable improvement. They also noted that monitoring officials should receive better remuneration so as to reduce the possibility of accepting bribes.

In sum, illegal/illicit diamond mining is driven by sociospatial relations amongst actors as they try to fulfill their socioeconomic agendas at the detriment of local and national economic growth and development. Although there was a general consensus that the extent of illegal mining had declined to about 20 percent, it was more widespread in remote locations. Study findings indicate that high license fees, corruption of chiefs and

¹²¹ These included teachers, religious heads, mines monitors, town chiefs

mines officials, preferential treatment in land allocation, government's limited capacity to enforce regulations were the major causes of illicit mining. Illicit mining therefore reduced mineral revenues for mining chiefdoms and the central government impetus for economic growth and development. In order to reduce illicit mining, license fees should be reduced, corruption should be minimized, economic incentives for mines officials should be improved, and capacity to enforce regulations should be enhanced.

5.2.2 Illicit Diamond Trade

Social relations and a complex network of actors operating at different scales facilitate illicit diamond trading (smuggling). Such an illegal marketing system thrives in the absence of an effective state regulatory system. Illicit marketing of diamonds constitutes a complex network of actors that include miners, supporters, dealers, the 'open yai' organization, and international diamond buyers. The 'open yai' organization consists of diamond peddlers locally known as *banabana* or *jewelerman* and diamond dealers engaged in illicit marketing.¹²² National mining laws require that diamond dealers and their agents pay license fees and taxes to the national government and Kono's local government stipulates that dealers pay local taxes.¹²³ However, a sizeable number of actors involved in diamond marketing in Kono evade the legal requirements.

The dialectics of structure and agency are also manifested in diamond trading as illicit dealers can circumvent the national scale and trade directly at the international level in order to satisfy their economic agendas. Mining regulations require that diamond

¹²² A senior mines official said that there has been considerable growth in the number of diamond brokers in post-conflict Sierra Leone.

¹²³ A Sierra Leonean pays annually \$2000 for a dealer's license, an ECOWAS citizen \$2500, while a foreign national pays \$5,000. Each dealer's agent pays \$1000 (Sierra Leonean) and \$1500 (ECOWAS citizen). As of July 2009, the mines ministry has recently recommended a 10-20 percent reduction in the cost of dealers and exporters' licenses.

exporters pay 3 percent of the value of diamond to be exported and that the diamond parcel is sealed at the Gold and Diamond Department in Freetown and a Kimberley Process Certificate is issued (MMR, 2005).¹²⁴ The sealed parcel and certificate of origin authenticate the exporter's diamonds as legal. However, some actors smuggle diamonds. A majority of respondents (61.7 %) maintained that the main driving force behind diamond smuggling was better market prices in other countries. A senior NGO official strongly believed that the major reason for smuggling of diamonds to neighboring countries was that diamonds were undervalued in Sierra Leone.¹²⁵ With considerable economic power, few diamond magnates (mainly of Lebanese) have dominated the economic structure of buying rough diamonds from artisanal miners and diggers at prices far below their market value.¹²⁶ Interviews showed that diggers received about 10 to 15 percent of the proceeds while the supporters/dealers received the rest. Focus group findings echoed interview findings. Based on approximation, a one carat diamond of good quality brings a different price to the key actors along the diamond commodity chain. The digger is estimated to earn \$130, the licensed miner could receive \$370, the supporter/dealer up to \$1000, and the exporter \$1100 (Levin and Gberie 2006).¹²⁷ As a result some illicit miners/dealers hoping to obtain higher prices smuggle diamonds extracted or initially purchased in Kono District to Guinea and Liberia.¹²⁸ This conforms to what Smith (1992) refers to as "jumping scale." By moving from a scale they considered unfavorable to their economic agendas – maximizing diamond profits– to a

¹²⁴ The Gold and Diamond Department is within the jurisdiction of the National Revenue Agency.

¹²⁵ Interview with a senior official of NMJD in Freetown.

¹²⁶ These diamond magnates (dealers and exporters) are the main financiers of artisanal miners/diggers.

¹²⁷ Diamond dealers revealed that the price per carat increases exponentially in relation to the size of the diamond

¹²⁸ Even-Zohar's (2003) study indicated that only 15 % of the actual value of a diamond remains in Sierra Leone while the remaining 85 % goes to international diamond actors.

larger scale (international) that was economically favorable to them, illicit dealers “jumped” scale.

Furthermore, government’s incapacity to effectively monitor the borders to Guinea and Liberia and the Lungi International Airport has created opportunities whereby diamond smugglers maximize their profit margins at the expense of official mineral revenue. Respondents (16.7 % of them) attested that porous borders were the major cause of illicit trade (smuggling) of diamonds. A license holder stated that most of the big smuggling missions passed through the national airport that lacked modern devices to detect gemstones. The overwhelming response of key informants was that the country’s borders were porous and that was why smuggling of diamonds was still widespread.

Corruption and informal social networks were also identified as causes of illicit trade.¹²⁹ A number of key informants attributed diamond smuggling to lack of transparency and accountability. A mines monitor asserted that corruption was rife at the senior level as well because senior mines monitoring officers staffed check points and the airport. He added that rather than upholding the monitoring system, they facilitated smuggling in return for big ‘handshakes.’ An elderly person and a religious head believed that most of the smuggling was orchestrated by foreigners who were sponsored by their relatives in neighboring countries such as Guinea, the Gambia, Senegal, and Mali.

A major question then becomes, how do smuggled diamonds get into the international market when diamonds can only be exported with a certificate? It is believed that informal social networks facilitate the process of getting illicit diamonds into the legal channel. A senior mines official alleged that in Guinea those who own

¹²⁹ A DFID (2002) study underscored diamonds and corruption as an issue of major concern.

mining companies in Bandakoro register Sierra Leone's smuggled diamonds as legal diamonds and export them as diamonds mined in Guinea. There are also instances in which corrupt practices by security and customs officials at border checkpoints (including the Lungi International Airport) may have aided and abetted smuggling. In fact, on April 13, 2009, NBC and CBP news reported that customs officials at JFK airport, New York seized 28 diamonds with a declared value of \$800,000 that originated from Sierra Leone without the Kimberley Process Certification (cbp.gov). How they went through Sierra Leone's Lungi International Airport is a cause for concern.

Finding a solution for diamond smuggling will increase the mineral revenue base for the GOSL, and by implication mining communities. This is however an uphill task as smuggling has been entrenched in West Africa (Dietrich 2004; Even-Zohar 2003). The KPCS has contributed in reducing contemporary smuggling and therefore substantially increasing official diamond exports. Official diamond exports which amounted to \$31.3 million at the onset of the war in 1992 and dropped to \$1.78 million at its peak (1998-99), rose to \$41 million in 2002 (following the inception of the certificate of origin controls in 2000) and increased to \$141 million in 2007.¹³⁰ Nevertheless, Sierra Leone diamonds are being smuggled. Official figures about the proportion of diamonds smuggled are non-existent. However, estimates of smuggled diamonds ranged from 20 to 50 percent.¹³¹ Total diamonds exported in 2006 amounted to US \$125 million and total government

¹³⁰ Diamond exports for 2008 dropped significantly to \$98 million due to the global credit crunch and the moratorium of kimberlite mining following the December 13, 2007 violent conflict. Koidu Holdings Limited (KHL) a South African based company failed to complete the housing project for people displaced by blast mining activities as stipulated in the concession agreement. In spite of several complaints to local authorities, the mines ministry and senior politicians they continued blast mining without relocation. Hundreds of affected people of Koidu town demonstrated in front of the office of KHL saying that 'No Blast Mining' yet the company went ahead and blast kimberlite dykes. Confrontation ensued between security forces and the crowd. Security forces responded by firing live bullets that led to the death of two youths while nine were injured.

¹³¹ Based on government mines officials estimation.

proceeds amounted to US\$5.27 million (MMR, 2008). If that was regarded as 80 percent of diamonds actually mined in Sierra Leone, then US \$31.25 million worth of diamonds may have been smuggled (assuming that 20% of diamonds produce were smuggled). This would have generated additional official mineral revenue of US\$ 1.32 million based on the export tax only. This would have augmented the DACDF, thus increasing the amount allocated to mining communities for development purposes. Furthermore, the government would have generated some money from licenses if the smugglers were operating formally. As of 2006, the mines ministry recorded \$220,000 from export licenses. If this amount was generated from 80 percent of exporters (assuming that the remaining are smugglers), then the government may have lost an additional \$55,000. It is essential that smuggling be further reduced so that diamonds can play a more fundamental role in stimulating economic growth and fostering development.

Reconfiguring the scalar arrangements of artisanal diamond sales and higher prices for diamonds at the mining level could minimize smuggling. In fact, 40 percent of respondents indicated that a system should be set up whereby international buyers could come to Kono District (the local level) and buy directly from miners/diggers.¹³² Unlike the KPCS that emphasizes stemming conflict diamonds in the global market without a clear provision for improved market prices for miners/diggers, what the respondents advocated is similar to Gold Standard Zero in Ghana. It calls for the incorporation of artisanal gold mining into the fair trade agenda in which operators interact directly with Western retailers with the hope that miners command near-market-value prices for their minerals (Hilson, 2008). A paramount chief said that the purchase price for diamonds

¹³² USAID invested \$15million dollars in the formation of diamond cooperatives in Kono District with the aim of selling diamonds directly to international buyers but poor diamond output resulted in substantial loss and thus the termination of the project.

should be attractive to miners and should reflect the standard price per carat for rough diamonds in other SSA countries. He states ‘the current restrictive market system allows a few diamond magnates to buy at very low prices’ He notes that ‘a fair price would reduce the chances and risks of smuggling to neighboring countries.’ Other interviewees expressed similar views. Miners’ focus groups indicated that undervaluing rough stones at the local level was a deliberate attempt by a cartel of diamond dealers to make astronomical profits. For them, if the government can ensure fair prices for diamonds at the mining communities, smuggling would be reduced. A number of respondents (22.5 %) further said that higher prices should be paid for local purchase. Thus reconfiguring the scalar arrangement of diamond sales and better purchasing prices at the local level may mitigate diamond smuggling.

In addition to price differentials, smugglers may be inclined to “jump” scale due to lower export taxes in neighboring countries (Smith, 1992). In other words, diamonds can be smuggled to other West African countries due to export tax differentials in neighboring countries (Paes, 2005).¹³³ The governments of Liberia, Guinea, Cote d’Ivoire and Sierra Leone (the Mano River Union countries) have been working towards a uniform export tax system for precious minerals (Garrett et al., 2008).¹³⁴ It would therefore be necessary to eventually harmonize the export tax in West Africa as a whole in order to reduce the incentive to smuggle.

Furthermore, any formidable attempt to minimize smuggling would include regulatory measures as well as incentives for officials. Household survey responses (15.

¹³³ Lower export taxes in Congo-Brazzaville made it a favorite destination of diamonds smuggled from DRC and Angola (c.f. Paes 2005).

¹³⁴ The Mano Union comprises Guinea, Sierra Leone, Liberia and Cote d’Ivoire. Its main objective is to foster economic cooperation amongst member countries.

8 %) pointed out that the national borders should be better policed in a bid to crack down on smuggling. A senior mines official suggested that improved human capacity, and modern detection devices are essential requirements for curtailing smuggling. Donor agencies and the central government should ensure that mines monitoring officers and customs security personnel receive adequate training geared towards better policing of borders. But well trained monitoring officials with adequate modern monitoring devices may be motivated to discharge their duties faithfully, if salaries and other incentives are improved.¹³⁵ As some respondents (12.5 %) opined, mines monitors and wardens, customs and security officials should be given better incentives so that they can discharge their duties effectively.

In sum, smuggling is a major impediment to official mineral revenue generation, yet it can be minimized if adequate measures are implemented. Both the improvement of administrative and legal enforcement ability are essential. Yet, economic incentives that include bringing international buyers directly to miners, and paying standard market price for rough diamonds commensurate to other SSA countries and other parts of the world can contribute to minimize illicit diamond exploitation.

This section has shown that spatial agency of actors demonstrated by social networks and corrupt practices have undermined diamond mining and marketing with significantly adverse economic implications for the government and mining communities. Although weak enforcement of mining legislations was prevalent, corrupt practices and social networks amongst diamond stakeholders at different levels were instrumental in perpetrating illicit diamond exploitation. As a result of powerful local and international

¹³⁵ In an interview with Martin Rapaport in 2006, a senior mines official said that the average monthly salary of mines monitors was only \$65 (<http://www.diamonds.net/fairtrade/Article.aspx?ArticleID=16458>).

networks particularly in neighboring countries illicit dealers have been able to ‘jump scales’ in anticipation of higher prices at the international level.

On the whole, illegal diamond mining and smuggling are major challenges of mineral resource management in post-conflict Sierra Leone which lends support to the socioeconomic dimension of the resource curse. Illicit mining and smuggling has reduced maximum official revenues that could enhance development in mining communities in particular and contribute to national economic growth and development. Part of this problem stems from the socio-economic dynamics of diamond mining which is the subject of discussion in the ensuing section.

5.3 Socioeconomic Analysis of Diamond Exploitation

5.3.1 Sociospatial Dynamics of Access and Control of Mining Land

Sociospatial structure and agency are pivotal in accessing, controlling and utilizing mining land. Access to land for artisanal and small scale mining involves the interplay amongst and between the following social actors: the chiefs (traditional leaders), mines government officials, the potential license holder, and diggers. While access to land for artisanal and small scale mining is guided by national mining laws, social connections (mainly at the local level) and economic power are essential ingredients in obtaining land in Kono District. A potential artisanal miner identifies a spot within a designated mining area that he/she believes contains diamond deposits. Interviews with license holders revealed that their knowledge of the area was the principal determinant of mining area selection. However, a prospective mining site must be within an area designated as an artisanal mining area by the Ministry of Mineral Resources. As custodian of the land, the town chief is informed about the mining interest

of the potential miner. The Artisanal and Small Scale Mining Policy of 2005 stipulates that a Chiefdom Mining Allocation Committee allocates land to a potential miner before the Ministry of Mineral Resources (MMR) processes the mining license. The Chiefdom Mining Allocation Committee (which includes town and section chiefs, and some elderly persons) headed by the paramount chief determines whether or not to grant permission to the applicant. Social connection to members of the allocation committee is therefore essential to obtain mining land with potentially rich deposits and for assurance of continued renewal of license for the same plot. After the approval of the Chiefdom Allocation Committee, national government mines officials are then sent to examine the land to ascertain that it is not a disputed plot, it is within a designated mining area, it has not been assigned to someone else, and that it has been assigned to a national of Sierra Leone. The land is thereafter demarcated by a mines warden (MW). The MW takes the plan to the town chief who certifies and appends his/her signature. The document is then taken to the paramount chief who appends his/her signature.¹³⁶ The potential license holder pays surface rent (Le 100,000 ~\$33) to the chiefdom as stipulated in Section 41 of the Mines and Mineral Regulations. The application is then taken to the Kono District Mines Engineer of the Ministry of Mineral Resources (MMR) for the issuance of alluvial mining license upon payment of monitoring, rehabilitation and license fees in accordance with the Artisanal and Small Scale Mining Policy of 2005.

A hierarchical sociospatial structure of chiefs gives paramount chiefs considerable power in land allocation. The paramount chief, who is the head of the

chiefdom, wields considerable power in apportioning land to a potential miner.¹³⁷ The hierarchy of chiefs comprises the paramount chief who is the head of the chiefdom, followed by section chief who is in charge of a particular section of the chiefdom. Next is the town chief who is the head of a small town or village. These chiefs are elected members and are officially recognized by the central government. Though there is a chiefdom allocation committee, as chair, it is generally difficult for the committee to act counter to the paramount chief's suggestion. In fact, he can sway the committee to accept his position as regards endorsement or rejection of mining applicants.¹³⁸ The paramount chief may occasionally receive requests for artisanal mining land from a senior politician in Freetown or other districts, or from influential Sierra Leoneans abroad. The paramount chief invariably grants such land allocation requests. Town chiefs also play an instrumental role as they are the first to grant permission for the examination of a potential mining plot after seeking the consent of the section chief. Town chiefs also endorse applications for mining licenses. While in most cases a paramount chief gives affirmative response to a town chief's request for land allocation to an applicant of interest, this is not always the case. However, the town chief of a designated artisanal/small scale mining area rarely turns down the paramount chief's request for the apportionment of mining land to an applicant. The power hierarchy amongst chiefs places the town chief at a subordinate position to the paramount chief. On the whole the spatial and sociopolitical relations surrounding artisanal and small-scale mining land allocation gives considerable power to paramount chiefs.

¹³⁷ Next is the section chief who is more of a ceremonial head of a section of a chiefdom followed by the town chief who is the traditional leader of a town/village.

¹³⁸ Interview with an elderly person who serves in chiefdom mines allocation committee.

Agency amongst actors undermines land allocation administrative structures resulting in winners and losers. As custodians of the land and decision maker in land apportionment, chiefs are said to have utilized their traditional sociopolitical authority in land allocation for economic pursuit.¹³⁹ Interviews showed that miners/license holders who had economic power were in a position to give extra 'incentives' to chiefs so as to access potentially rich deposits and to have numerous mining plots. National mining regulations require that in the case of an individual, an artisanal mining license should be issued only to Sierra Leonean citizens. As majority of Sierra Leoneans did not have the financial capacity to obtain licenses, they sought financial assistance from foreign actors, especially those of Lebanese descent and West Africans, such as Fulas, Madingos, and Marakas.¹⁴⁰ The financiers therefore provided the 'handshake' for the speedy processing of land documents. The corrupt practices of some land allocation authorities therefore provided avenues for such illegal practices of nationals and foreign actors engaged in artisanal diamond exploitation. Those who could not provide such 'incentives' often fail to obtain mining licenses.

Social connections to chiefs can also facilitate access to land for mining as indicated by a number of interviewees. A female license holder maintained that she was able to secure good land because she is related to the town chief and pointed out that he apportions rich land only to relatives and close friends.¹⁴¹ As a result those who were not economically powerful and did not have social connections to chiefs or other political elites had lower chances of obtaining land, and if they did it was invariably marginal

¹³⁹ A town chief said that as competitive for good land increases, he received 'bigger envelopes' from mining land applicants.

¹⁴⁰ In the case of Kono most of the license holders are natives of Kono. West African nationals from the Gambia, Mali, and Senegal are commonly called Marakas.

¹⁴¹ Interview with female license holder, April 2008.

land. The pivotal role of chiefs in accessing mining land was reflected in the survey as 43.1 percent of respondents said they leased land from chiefs. Chiefs therefore utilized the chieftom scale in allocating lease land to satisfy their political and economic agendas by engaging in both legal and semi-illegal lease arrangements. While legal arrangements conformed to official policy, semi-illegal agreements referred to cases in which surface rent was paid to chiefs but the other stages of mining land acquisition were not fulfilled.

Sociospatial arrangements and customary beliefs were other avenues through which people could access mining land. In fact, 40.4 percent of respondents (valid n=218), most of whom were diamond diggers, officially accessed mining land based on a socioscalar agreement with licensed holders. Rather than obtaining lease land at the chieftom scale, miners negotiated with license holders in order to access mining plot. A minority inherited land from parents (6.4 percent), or obtained permission from relatives/friends (4.6 percent). Social linkages amongst local residents were also useful in mining-land access as some miners obtained permission from relatives/close friends to mine part of a license plot. This was an arrangement between the two parties which often required the sharing of gravels or winnings based on pre-mining arrangements. Some families owned land (locally called 'bush') part of which was allocated to miners under private arrangements for diamond extraction. However, they were required to obtain licenses before engaging in mining. In some cases they did not acquire licenses and since most of these lands were in remote areas, they participated in illegal mining. This exemplified how sociospatial patterns of access to mining land via arrangements amongst local and non-local actors could stifle the already limited capacity of the mines ministry in enforcing diamond mining regulations.

Social agency of local miners/diggers was also manifested in mining-land access within the customary land tenure system. Diamond diggers and youths (some of whom mined independently) maintained in focus groups that it was their customary right to access and mine land that was not licensed. A minority of respondents (5 percent) expressed a similar view. This is a general issue of concern in alluvial diamond countries in SSA where customary land tenure comes into conflict with the exclusive mineral rights of national governments (D'Souza and Pooter, 2008).¹⁴²

Social networks and power may allow miners to circumvent mining regulations regarding mining licenses. Continued ownership of land for artisanal mining is dependent on renewing licenses as indicated in mining regulations; however, some miners utilized social relations with traditional leaders for continued occupancy of mining land without fulfilling artisanal license obligations. According to the 1996 Mines and Mineral Act and the 2005 Artisanal and Small Scale Mining Policy, a license holder is issued a license for a period of one year and can renew it for two more years. Failure to renew licenses may result in forfeiture of the mining land. However, there were cases in which miners were either not willing, or were unable to pay all of the various fees involved. A local resident said that because of poor 'winnings' in 2007, he was only able to pay surface rent to traditional authorities in 2008.¹⁴³ Since the chief was his close friend, he was allowed to mine the land. Whenever national government mines monitoring officers came to his mining site he informed them that he had the endorsement of the town chief as it was the chief's plot. Similar views were expressed by focus groups of diggers. They emphasized that there were cases in which people paid surface rent and then "work" the land even

¹⁴² These include the Democratic Republic of Congo, Ghana, Angola, and Guinea.

¹⁴³ Diamonds obtained are often called 'winnings' in mining communities.

though it was not fully licensed. This shows how chiefs expressed their power and influence in mining in their jurisdiction for political and economic gains. It also demonstrates the incapacity of the national government and the district mines department in enforcing artisanal mining regulations at the mining site level. Such outcomes have local and national economic implications as failure to pay the entire required artisanal mining license fees result in loss of government mineral revenue, thus reducing the chiefdom's share of the Diamond Area Community Development Fund (DACDF).

In sum, the dialectics between sociopolitical power of chiefs and government mines authorities and agency of local actors have led to unequal access to land. While corrupt chiefs and mines officials have been able to benefit socioeconomically, the majority of people who lacked social connections and/or political-economic power were not able to access mining land.

5.3.2 Sociospatial Dynamics surrounding Labor

While access to land is subject to asymmetrical power relations and social connections, the power dynamics surrounding labor arrangements are more complex and in many instances unfavorable to diggers. Surveys revealed that the major sources of labor were hiring groups of laborers (41.3 percent) and utilizing extended family members (30.3 percent). Migration of youths and other able-bodied men (and a few women) into mining areas provided a large pool of laborers with disadvantageous economic effects on them. In fact, 51.2 percent of the sample population was migrants, mainly from other districts in the Northern Province. Other sources of labor were friends (15.6%), social groups (10.1 %) and working for self (2.3%).

There were different gradations of labor arrangements between diggers and their bosses some of which were risky but less exploitative while others were more secure and exploitative. The 'two-pile' system was one in which gravels are placed in two piles, one for the supporter and one for the miner and gang of diggers. Diamonds collected from a pile of gravel were for the specific group. While this was risky, as winnings depended on chance, it was not exploitative. Another labor arrangement was one in which diggers/laborers were paid daily wages of about Le8, 000 (\$2.50). This type of arrangement was not popular but was increasing especially amongst small scale (semi-mechanized) mining. Diggers/miners were required to hand over all diamond winnings to their boss (most times a mines manager/supervisor). While this was less risky to the diggers, they did not benefit proportionally based on diamond sales.¹⁴⁴ Most of these laborer-boss arrangements were not guided by national labor rules. A number of diggers noted that they worked for very long hours without receiving any over-time pay or extra benefits, and they could be dismissed as and when the boss desires.

A scalar arena in which social relations of empowerment and disempowerment was evident was in the most common labor arrangement in artisanal diamond mining in Kono District. In this system diggers opted for a share of diamond winnings and did not receive a salary except for subsistence living (a cup of rice and about Le 1, 000 (~33cents), and in few cases accommodation/and or basic medical provision). Since diggers were dependent on supporters and miners socio-economically, they invariably had to stay with their bosses many of whom were exploitative. This widely practiced labor arrangement in which the economically powerful supporter/miner marginalizes diggers has been referred to as a tributary or debt bondage system (Levin 2006; Moyer,

¹⁴⁴ Interviews with diamond miner

2003; Zack-Williams 1995).¹⁴⁵ In this study this association is described as a patron-client relationship in which the supporter/miner is the patron and the group of diggers, the client.

Reciprocal patron-client relations between miners/supporters and diggers had mixed socioeconomic outcomes. In assessing the patron-client relationship between diggers and miners/supporters, 58.5 percent of respondents (valid n= 229) believed that the relationship was adequate.¹⁴⁶ This high proportion of satisfaction could be attributed to the reciprocal expectation between both parties. Based on the social relations between supporter/miner and digger, the financier can loan the digger some money during the mining off-season on condition that the digger will work for him in the next mining period. Some supporters also rendered help to the laborer's family especially in emergencies. This included support during illness, funerals, and family festivity. In a society where livelihood opportunities are limited and irregular, a digger has someone who not only provides him with subsistence living but one he could turn to in times of emergencies. While 9.6 percent gave a neutral response, 31.9 percent maintained that such a system was inadequate. Although a majority of the sample population expressed positive opinions about the patron-client system, feedback from diamond diggers' focus groups was mainly negative. Most participants underscored domination and marginalization of diggers. They opined that supporters did not treat diggers well. Many diggers maintained that most supporters nowadays did not provide housing and medical care. For those who provided these services it was suboptimal. A majority of them said

¹⁴⁵ Debt bondage is described as a situation in which diggers receive loans from miners/supporters when they have financial difficulties. As a result of very low earnings, these diggers accumulate debts that they find difficult to pay back and are therefore obligated to miners/supporters.

¹⁴⁶ Diamond diggers comprised seventy-seven percent of respondents in mining chiefdoms.

that if housing was provided, 4 of them were placed in one room. While they all agreed that supporters/miners provided some feeding for them, most maintained that there were days when the miner did not provide them with feeding money. Some diggers indicated that some supporters/miners demanded their equipment (sieve, shovel and pick) if a digger frequently complained of ill health. Other diggers said that some miners were aggressive to diggers, uttered impolite words and dismissed the digger if not satisfied with his pace of work. However, diamond supporters maintained that current diamond winnings were very low while total expenditure was very high. Therefore, in most cases they ended up only breaking even or at times made very little profit. Thus they were not in a position to give diggers a higher share of the winnings.¹⁴⁷

Unequal power relations between diamond mining investors (supporters) and diggers were also manifested in the form of economic exploitation of diggers. In their assessment of how diamond winnings were distributed between diggers and supporters, 47.4 percent of respondents believed that diamond winnings were distributed unfairly while 11.3 percent rated it average. They advanced the following reasons for the unfair distribution of winnings: supporters exploit diggers (55.4%), diggers do not receive much money (33%), diamond dealers exploit diggers (6.3%), and scarcity of winnings (5.3 %). Supporters and miners normally kept records of mining expenditures and deducted them from proceeds of diamond 'winnings' before sharing the remaining amount. In most cases, miners did not keep a cap of mining expenditures while supporters normally inflated expenditure so as to get a bigger amount from the net share (Levin and Gberie, 2008).¹⁴⁸ Interviews confirmed this view. The difference between actual expenditure and

¹⁴⁷ Interview with diamond supporters in Koidu town, Kono District.

¹⁴⁸ Information obtained from diggers' focus groups.

the inflated figure was essentially extortion. A number of focus-group participants echoed the same view. Other focus group members said that an underground pre- arrangement between dealers and supporters required dealers to undervalue the diamonds and paid the undervalued amount when diggers were present. This undervalued amount was then shared between supporter/miners and diggers. The supporter/miner later went to the dealer to collect the remaining money which was his extra financial gains.¹⁴⁹ Some diggers maintained that at times they disagreed with the miner in regard to their share of winnings by arguing. One of them indicated that their group reported the matter to a senior mines official who promised to investigate. They went there several times only to be told eventually that they should accept the said amount as the miner incurred considerable expenditure during that mining period. They lamented that there was no institution that arbitrated fairly when complaints of these types were lodged. Thus in general, diamond diggers did not benefit much economically.¹⁵⁰ In other words, diamond exploitation was still a resource curse for most diggers.

While labor arrangements and compensation are normally discussed prior to mining operations, such arrangements can be modified or changed at the discretion of the supporter (investor). The “Kongama” labor arrangement was commonly used. Diggers would continue extracting gravel but would not receive subsistence living.¹⁵¹ The gravel would be packed in two piles: one for the diggers and one for the miner/supporter. The critical thing here is that at the washing of gravel, diamonds found in one’s pile belong only to the assigned individual or group of individuals while failure to find diamonds

¹⁴⁹ Similar view was expressed in the diamond review report (PAC, 2008).

¹⁵⁰ Generally diggers especially those that are youths are firmly convinced that are susceptible to economic exploitation by supporters/miners.

¹⁵¹ Diamond diggers refer to subsistence living as daily ration as it is given on a daily basis.

from the other pile leaves the other individual or group of individuals in economic jeopardy. Thus the risks and potential benefits are shared virtually equally.

Power relations and agency are evident in artisanal diamond mining as diggers can express their agency through independent informal mining. As discussed in section 5.2.1, diggers participated in “over kicking” and/or “ghado.” By mining independently in small groups, diggers took decisions about diamond mining and marketing independent of a patron with the aim of gaining liberty and better economic gains. In other words, diggers create a smaller social and spatial scale of diamond exploitation that is potentially more beneficial to them. Their independent informal mining activities were facilitated by local mines officials, landholders and in some instances traditional leaders. Since these stakeholders gained economically (through periodic underhand payment and share of diamond sales), they ensured that the activities of independent diggers were supported. An alternative reactionary form of agency was that diggers often stole diamonds and sold them to independent middle-men or dealers (dyulas). Increasingly, dyulas who were not interested in undertaking mining but preferred purchasing diamonds from whatever source gave none or at times minimal assistance to diggers. Many a time diggers brought stolen diamonds to these dyulas (stationed in big towns like Koidu, Tefeya, and Sewafe) who bought them at low prices. Nevertheless, diggers received more than they would have from miners/supporters. Through such illegal activities, diggers constructed and reconstructed scales of diamond exploitation to suit their emancipatory and economic agendas.

In sum, the labor relations surrounding artisanal and small scale mining were dominated by a patron-client system, though agency of diggers also prevailed. Labor

arrangements were structured in such a way that supporters (financiers) provided minimal welfare for diggers who bore nearly all the economic cost. Despite this risk, diggers engaged in independent mining activities were in a better position to realize better economic rewards from diamonds compared to what was obtained through supporters/miners.

5.3.3 Gender Relations and the Resource Curse

Gender dynamics surrounding diamond exploitation and the emerging socio-environmental impacts were also influenced by sociopolitical relations amongst actors. In other words, power relations between men and women could determine the extent to which the resource curse had gender dimensions and how they were manifested. In examining gender and the resource curse, access and control of mining land, gendered division of labor in mining, and the environmental impact of mining on women's farming activities are important subjects for discussion (Carney, 1993; Hovorka, 2006; Rocheleau et al., 1996).

Access and control of mining land can be influenced by gender relations in predominantly patriarchal societies, such as those in Sierra Leone. While some studies have underscored significant gender differentiation in access to mining land in Kono District (Levin 2006; Temple et al. 2005), survey responses in this study indicated that gender differentiation was not significant. A majority of the predominantly male respondents (89.5 percent) maintained that women could access mining land while 10.5 percent (valid n=238) said they could not. With regards to access to quality land, however, 78 percent of respondents (valid n=227) believed that women and men had equal opportunity to be awarded quality mining land, while 22 percent felt that only men

were allocated potentially rich mining land. However, the response of female respondents (2.9 percent of respondents) was different as 42 percent believed that women could not access mining land while 48 percent maintained that women could not obtain potentially rich mining land.¹⁵² A female license owner said that women had equal chance of obtaining quality mining land as men. Another one pointed out that though there were cases in which women were not given quality land the central issue was how well connected you were to the chiefs, not gender based relations. She said ‘a woman may be luckier to secure richer land than a man.’ In general however, land allocation decisions were made by male-dominated chiefdom mines allocation committees, which were also headed by male paramount chiefs. Informal interviews revealed that women were not involved in decision-making regarding land allocation. Thus there was a tendency for gender bias in land allocation, at least as perceived by many women. Furthermore, very few women owned mining licenses. Thus unequal power relations surrounding access and control of mining land often favored men.

There was also male dominance as regards gendered division of labor in diamond exploitation. While men performed the various diamond mining and marketing roles ranging from diamond digging to more lucrative activities such as diamond dealing and exporting, women were involved in very few roles. Survey responses indicated that some women served as ‘supporters’ (38.5%), and that a majority of them were engaged in ‘overkicking’ (57.1% of respondents).¹⁵³ In focus group discussions, some women noted that they would like to serve as diggers in the formal artisanal and small-scale diamond mining system but the male dominated miners/license owners and dealers/supporters did

¹⁵² Such a small sample size for women does not truly represent female views statistically.

¹⁵³ While 2.2% of women were miners/license owners, less than one percentage performed other activities such as dealers, diggers, and diamond washers.

not employ women as diamond diggers.¹⁵⁴ However, women provided ancillary services such as preparing food for mining groups and serving as ‘water-women.’¹⁵⁵ On the whole, diamond mining in Kono District was a male dominated rural economic activity.

The limited roles of women in diamond mining could be attributed to the multiple roles (economic and non-economic) of women as well as socio-cultural practices surrounding diamond mining. Women were generally engaged in economic activities such as gardening, farming, trading (small and medium scale businesses) as well as traditional reproductive roles (food production, cooking, caring for the household, water/firewood acquisition).¹⁵⁶ For most women traditional reproductive roles pre-empted participation in mining. Diamond mining (especially digging) was not a traditional economic activity for women because of the nature of the work. In general there was a social belief that women would find it extremely difficult to cope with the nature of the job, hard and rather dangerous working conditions of diamond digging and the duration of a work day. Although women’ traditional reproductive roles and other economic activities involved time and physical exertion they were not as physically exhausting and dangerous as diamond mining. Furthermore, most women’ activities occurred within a few miles off their residence or at the household compound. However, diamond mining activities involved forming groups (gangs of diggers) who often travel tens of miles to mining sites. In fact, some miners stayed in distance places for an entire mining period of five months. In contrast, women who engaged in ‘overkicking’ of mined areas traveled a few miles from their residence and returned home daily. Although they worked

¹⁵⁴ There is also a cultural belief in mining communities that women should not be allowed to dig for diamonds as that would bring ‘bad luck’.

¹⁵⁵ They fetch water for ‘washing’ gravels that may contain diamonds.

¹⁵⁶ Information revealed by women’s focus groups.

individually, two or three of them normally mined within a particular site. Thus it proved difficult for most women to cope with the nature of diamond digging. Furthermore, women were generally not socially acceptable as diggers because of a general belief that it is 'a man job.'

Diamond mining has also created negative socio-environmental impacts on women's vegetable gardening and farming activities. The general view of women focus-group participants was that their gardening and farming activities had been badly affected by diamond mining. Some discussants maintained that in recent years, traditional authorities have allocated a considerable amount of wetlands that they used to farm to mining projects. Some lamented that they have lost more farmland since 2003 as a result of the expansion of small-scale mechanized and industrial mining activities. They therefore had to travel long distances to farm limited less fertile uplands. Since women were key subsistence providers, such land use transformation has produced negative impact on women's sources of income and household food production. Seasonal coincidence in labor demands in diamond mining and agricultural also had gendered implications. This was particularly so between May and September during which both economic activities required labor. Young men were lured into mining because of the prospects of striking it rich (and perhaps better daily wages). The dominance of able-bodied men in the mining industry had a significant impact on farming between May and September which was the peak farming period requiring considerable labor input. Women, especially those in diamond mining chiefdoms, were therefore overburdened with farm labor on top of other reproductive activities. The limited supply of farm labor constituting mainly female laborers was one of the reasons for small farm sizes (mostly 1

to 3 acres). Such dynamics undermined food production and sustainable livelihoods in the long run. The dependence of men on artisanal diamond mining that is not only risky but is faced with declining mining finds, showed that men were creating dependency on a fickle economic base.

5.3.4 Access to Capital for Diamond Mining

Foreign diamond actors, many of whom were considered exploitative, provide the bulk of capital for artisanal and small scale mining in Kono District. Capital outlay was therefore a challenge to most natives who were primarily dependent on the supporter system. In fact, only 0.9 percent of respondents cited bank loans as a source of capital for artisanal mining. Consequently, financiers were the major source of capital. This was reflected in the household survey as 70.6 percent of them (valid n= 218) indicated that supporters were the major source of capital (table 5.1). Interviews pointed that most financiers were Lebanese and Marakas and that they exploited diggers who had to depend on them in order to mine.

While supporters were pivotal for capital outlay, there were other avenues for capital, facilitated in part by social relations and other livelihood options (see Table 5.3.4). Respondents underlined the importance of family members in financing mining operations. A miner said that the mining operation he managed was financed by his brothers, aunts and uncles who were mostly engaged in business or worked in other parts of the country. Some diggers also said that they worked in mines owned and financed by their relatives. Other interviewees emphasized the role of other livelihood options in financing diamond mining (see Table 5.1).

Table 5.1 Sources of capital for artisanal and small-scale mining

Sources	Frequency	Percent
Supporters (financiers)	154	70.6
Family members	29	13.3
Diamond sales	11	5.0
Farming proceeds	10	4.6
Petty trade	7	3.2
Skilled trade	3	1.4
Cooperative society	2	0.9
Bank loan	2	0.9
Total	218	100

In sum, access to capital was a major shortcoming for most miners as they were heavily dependent on informal ‘financiers.’ The economic dependence of miners/diggers on the economically powerful financial providers underscores their continued exposure to exploitation within the patron-client system. It further illustrates how difficult it was for diggers to enhance their socioeconomic well-being.

5.3.5 Trends in Artisanal Mining Production

Although production costs have increased, artisanal diamond production has dwindled over the years. As a majority of those involved in diamond mining were diggers, reduced production and increased capital input had economic implications for diggers’ share of ‘winnings’ in a system many considered exploitative. It should be noted also that artisanal and small scale mining officially commenced in 1956, and since diamonds are finite, production has diminished over time. Interviews revealed that those actors who could afford to engage in mechanized deeper mining had a realistic chance of obtaining appreciable diamond winnings. The general impression of respondents was that household diamond production had diminished over time (Figure 5.2). A number of respondents (73.5 %) stated that diamond production was high prior to 1991 (pre-civil

war period), but only 1.1 percent considered production low. Very few households surveyed (n=42) were intermittently engaged in diamond mining during the civil war.

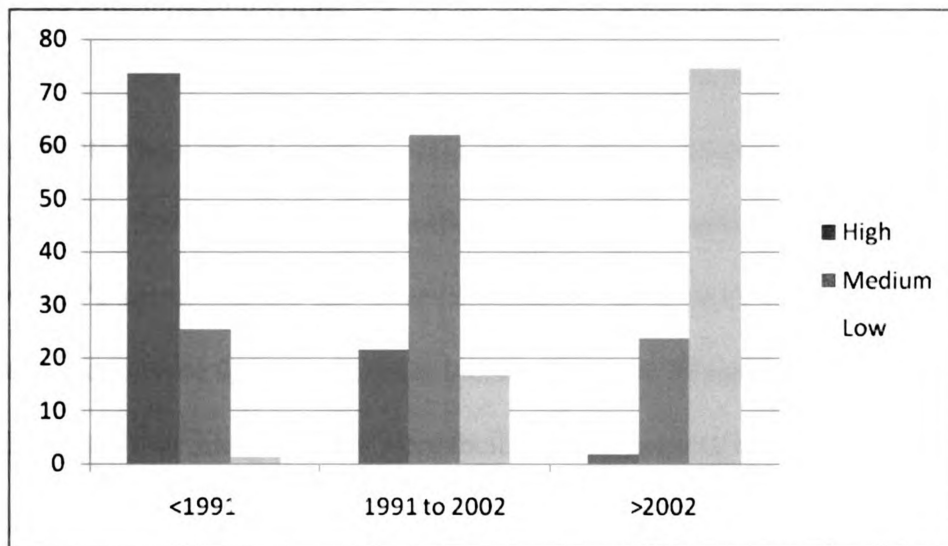


Figure 5.2 Perceived trends in household diamond production

The post-war period witnessed major transformation in household production of artisanal diamonds as most respondents (74.5%) revealed that current production was low. This dramatic reduction in household production could be attributed to a number of factors that include: reduction of near-to-surface diamond deposits partly due to intensive and rampant mining by rebellious factions during the decade long civil war, and assigning a significant portion of artisanal mining land to companies for prospecting, exploration and mining companies,¹⁵⁷ Thus for most actors at the bottom of the artisanal diamond mining chain, economic conditions had worsened as diamond production had decreased.

The future of artisanal and small scale mining as a vehicle for development is facing stiff challenges. As diamond mining goes deeper, requiring equipment and greater

¹⁵⁷ Interview with a digger who was abducted and forced to mine for the RUF.

capital outlays, artisanal miners will be further left out. Diamonds for development from the artisanal mining area would become less feasible.

5.3.6 Diamond Marketing

Sociospatial dynamics of diamond marketing at the district level constitute an intricate network of actors participating in formal and informal transactions. In general a miner normally sells legally and illegally mined diamonds to a dealer or through a dealer's agent. While a few sales take place at the scale of the mining site, most transactions are done in big cities including Koidu, Sewafe and Tefeya. A dealer indicated that diamond sales were facilitated by coaxers who convinced a seller that a particular dealer would pay a good price. Although the coxer apparently sought the interest of the seller, in reality he represented the interest of the buyer who eventually compensated him if the transaction was done. Most local miners were obligated to sell to dealers at chiefdom and/or district levels because most of them were sponsored by dealers/supporters.

In addition to dependence on dealers, asymmetrical power relations between dealers and miners reduce the power of the latter in negotiating the price of rough diamonds. Dealers, unlike most miners, had considerable knowledge about the value of diamonds; therefore the chances of miners receiving the full value of rough diamonds were remote. Diamond dealers undervalued diamonds so as to obtain substantial profits. This disadvantaged other actors, particularly diamond diggers, who had limited 'voice' in decisions regarding diamond sales. A diamond dealer maintained that most miners were aware of the value of small stones or "number 10," and it was difficult to persuade them

to sell below their actual value.¹⁵⁸ However, most could not accurately assess the value of bigger diamonds above two carats. Most dealers paid fair prices for small stones in order to gain the confidence and trust of the miner, but found ways to undervalue big stones particularly if they had some ‘stains.’¹⁵⁹ Thus diamond miners/diggers received just a fraction of the value of such diamonds.

A strong social network of illegal diamond peddlers undermines the official marketing regulatory structure. Although officials of the mines ministry suggested that the system be formalized and middle men be charged an annual fee of \$200, this proposal was shelved. This was partly due to the negative response of these middlemen as a majority of them said that they could not afford the proposed payment.¹⁶⁰ A senior mines official revealed that the national government was reluctant to press for their legalization as it did not want some licensed dealers to switch to this lower middle-man category as that would undercut government revenues. Evasion of dealer’s licenses by the middle men (jewelermen) can be partly attributed to the inability of national and local government authorities in ensuring that diamond dealers operate legally. It is also a challenge to regulate their activities if dealers and dealers’ agents do not have a physical business and location as was the case for most of those who operated in Kono District. Ineffectiveness in enforcing diamond dealing regulations was compounded by complacency and/or collusion with enforcement officials.

¹⁵⁸ Very small diamonds of less than a carat are locally known as “Number 10.”

¹⁵⁹ Interview with a paramount chief, Tankoro Chiefdom.

¹⁶⁰ Interview with a Mines Engineer.

Of greater significance were the sociospatial relations between licensed diamond dealers and their countrywide network of agents and miners.¹⁶¹ A prominent license holder who was also chairman of one of the dealers' associations said that he supported a number of miners around the country (national scale) and that about 80 percent of them brought gems to him for sale. For him a wider sociospatial network therefore increased the likelihood for dealers to obtain more diamonds. In other words, by creating a larger spatial network and maintaining social relations within it, dealers were more likely to satisfy their business agendas – obtaining larger quantities of diamonds. The dealer noted that the nascent stage of such a venture is challenging as one needs to have cash and establish connections locally and internationally. He underlined the power of his network, stating that 'no diamonds are extracted which I don't know about.' He claimed to have representatives in every part of the district where mining was occurring and agents in other diamondiferous areas, such as Tongo, Kenema District, Bo District, and in Zimi Pujehun District. His network of actors included diamond dealer agents, miners, diamond peddlers, and representatives in hotels and airports. While his relationship with diamond agents and miners enabled him to purchase legally mined diamonds, his links with illicit diamond miners and peddlers ensured that he bought illegally mined diamonds as well. His network was so powerful that he received telephone calls from his representatives whenever a diamond investor stepped foot in Sierra Leone. Thus with an expanded sociospatial network of legal and illegal agents and links to international diamond investors, he was able to increase the quantity of diamonds he could purchase and establish a wider avenue for diamond sales.

¹⁶¹ Most dealers support mining ventures in a particular town/village while others support many miners in different parts of the country.

He emphasized that while a dealer's economic power was necessary, the primary key to success was maintaining cordial social relationships with various diamond agents.¹⁶² Yet, as earlier discussed, the general consensus of miners and diggers was that they were socioeconomically exploited by economically powerful financiers.

Diamond marketing also follows a spatial hierarchy that encompasses local-national-global spatial scales. Interviews showed that intra regional marketing of diamonds was widespread in West Africa but that it was comparatively less than those bound for Europe and the rest of the world. The majority of Sierra Leone's official diamonds are exported to Antwerp Belgium, while Israel, Lebanon, and the UK are secondary export destinations. Thus diamonds exported officially involved the movement of diamonds from the local level – Koidu town – to the national level (specifically Freetown) where the GGDO is located, followed by onward transmission to the international market. However, there were actors who circumvented the extant marketing structures and smuggled diamonds to neighboring countries. By transporting diamonds from the local level (for instance, Koidu Town in Kono) directly to the international level (Guinea, Liberia, or the Gambia) they not only violated official regulations, but 'jumped scales' to satisfy their perceived economic motive; evading official taxes and receiving higher prices for their rough diamonds.

In sum, diamond marketing revolves around a dual system comprising official and illegal marketing. Sociospatial relations and networks surrounding diamond marketing have undermined efforts aimed at improving official marketing. Furthermore, unequal power relations between financiers and diamond diggers have placed the latter at a

¹⁶² These include miners and diggers that mine independently.

disadvantaged position as the patrimonial economic relations of power favors the dealers/financiers.

5.3.7 Economic Disparity and Inequality amongst Diamond Actors

The dynamics surrounding diamond pricing strongly influence the net profit obtained by diamond actors. However, most of the benefits go to diamond dealers and exporters who are: highly knowledgeable about the market value of gems, very cunning in sales negotiation with miners, and are the primary sources of finance for artisanal and small scale mining. The price per carat increases exponentially with increasing number of carats for the same color of rough diamonds. A diamond dealer pointed out that he pays \$500 for a one carat blue-white diamond, \$1,200 per carat for a two carat blue white, \$2,000 per carat for a 3 carat blue-white, between \$2,500 and \$2,700 per carat for a 4 carat blue white, and between \$3,500 and \$4000 per carat for a 5 carat blue white diamond. Another dealer said he pays between \$400 and \$500 for a one carat blue white diamond and between \$1,400 and \$1,500 for a two carat blue white gem.¹⁶³ Both dealers said that they made about 3 percent profit per transaction. In a similar vein, an exporter said he makes about 3 percent profit on each diamond exported. However, most junior actors (diamond diggers and miners) opined that dealers made 50 to 100 percent profit and for big stones up to 200 percent profit. While this could not be substantiated, evidences suggest that diamond dealers make disproportionate profit while diamond miners and diggers received a small percentage of the real value of diamonds.¹⁶⁴ Surveys revealed significant disparity between the mean annual household mining income of supporters/dealers and diamond diggers. While the mean annual household mining

¹⁶³ Interview with a diamond dealer in Koidu Town, Kono District, June 2008.

¹⁶⁴ It has been suggested that dealers make the largest profit for a single diamond transaction (c.f. Levin and Gberie, 2006).

income of supporters/dealers was \$1637.02 that of diamond diggers' households was \$263.52.¹⁶⁵ This demonstrates that on average the supporter/dealer received 6.2 times more income from diamond winnings than a digger. However, a dealer deals with many miners/diggers and therefore has a higher turnover. Diamond diggers therefore received an average income of 87 cents per day for the 10 months of mining while their counterparts in South America received at least \$ 7.50 a day [a difference of about 860%] (Blore, 2008). Comparing mean annual primary income in mining versus non-mining chiefdoms showed significant differences between diggers and ordinary farmers. The mean diamond income for diggers was \$263.52 while the mean farming income was \$402.56. However, the mean total household income of diggers' household was \$507.66 while that for farmers' households in non-mining chiefdoms was \$602. 14. This showed that on average, farmers were in a better economic condition than diamond diggers, especially those dependent on financiers (supporters).

Diamonds should augment household income and improve social status. Respondents' perception of diamonds in regard to household income and social status was sought. A majority of them (68.5%) maintained that the overall economic impact of diamond mining on their household was negative as what they had invested in mining far outweighed the financial gains. Some of them (26.9 %) said it was positive while 4.6 percent indicated that it had no economic impact on their household. As of 2007, diamond mining had increased the household income of only 27.9 percent of households. For the most part (72.1%) diamond mining did not augment household income. For those that had increases in household income, almost all of them (92.5%) said it was through

¹⁶⁵ Most of the household respondents were Sierra Leoneans and those that are dealers and mainly middle men and dealers' agent. Most foreigners declined household interviews.

direct diamond sales rather than wages (only 4.5%). Others (3.0%) said their source of income was through businesses servicing mining. As of 2007, diamond mining income increased the social status of 36.3 percent of respondents while that for 63.7 percent was not increased. A majority of those who indicated improvement in household socioeconomic status (84.1%) also indicated that it was through direct diamond sales. Others said it was through wages (12.5%), business servicing mining (1.1%), and remittances from miners (2.3%). Thus for the majority of local residents, diamonds had not made significant inroads to improving household economic income and social status in post-civil war Sierra Leone. Even-Zohar (2003) affirmed that only 15 percent of revenue remained in mining communities while Levin and Gberie (2006) noted that as of 2005 the profit margin of dealers and exporters was 6.4 times their total expenditure (including bribes). Although their figures were estimates, the current study corroborates with their previous findings.

In sum, from a social as well as an economic standpoint, artisanal diamonds in particular had not made positive impact on most people especially to the low-level actors in the chiefdoms, the district, and to the country as a whole. However, a few Sierra Leoneans especially traditional leaders, senior mines officials and a few local dealers have benefited socioeconomically. Artisanal and small-scale diamond mining has mainly benefited external players who reap substantial economic gains. This section has also demonstrated that sociospatial relations of empowerment and disempowerment were widespread in the areas of access to land, capital, labor, and the marketing of diamonds. As a result, the less powerful tried to gain liberty and satisfy their social and economic agendas by jumping scales. While smuggling involves jumping from a local to a higher

international scale, escaping from the patron-client system to an independent miner involves jumping from a local scale to a smaller scale of ghado or overkicking. Yet, on the whole, the less powerful remained socially and economically disempowered and continue to live in poverty while the few (chiefs, government mines officials, Lebanese and Maraka supporters) lived in affluence. Expanded socioeconomic disparity between a hierarchies of actors is amongst myriad factors contributing to another dimension of the resource curse – diamond-driven conflict.

5.4 Sociospatial Analysis of Conflict over Diamonds

5.4.1 Conflicts between Mining Communities and Traditional Leaders

The belief that powerful traditional leaders engaged in corrupt practices was a major concern in mining communities and a source of conflicts. In fact, 42.3 percent of respondents indicated that corruption was the major source of conflicts between communities and traditional leaders. Interviewees believed that traditional leaders did not use most of the surface rents from artisanal and small scale license holders and industrial mining companies for chiefdom development programs.¹⁶⁶ In 2005, for instance, a total of 1,190 artisanal licenses were issued in Kono District with surface rent amounting to 119 million leones [~\$39,270] (NMJD, 2006b). Some local residents pointed out that chiefs did not disclose the total amount of surface rent paid to the chiefdom treasury. While central government authorities were responsible for auditing chiefdom funds, they did not because that may affect the political continuity of the government in power in future elections.¹⁶⁷ Thus, the competing agendas of the central government in attempting

¹⁶⁶ Similar views have been expressed by Roy Maconachie (2008) when he examined governance initiatives in regard to mineral resources.

¹⁶⁷ Chiefs are very influential in their chiefdoms and can successfully lure their subjects to vote against the government in power.

to regulate diamond mining while ensuring a strong political base in the diamondiferous district can engender the non-accountability of chiefdoms' mineral revenue.

Mining communities also gave divergent views about how traditional leaders used the Diamond Area Community Development Fund (DACDF). While most interviewees in Nimikoro and Tankoro Chiefdoms believed that the DACDF had been utilized for community infrastructure (including the construction of schools, local courts, and clerks' quarters); those of Nimiyama Chiefdom lamented that most DACDF must have been misappropriated as there was no tangible evidence of community development in their chiefdom.¹⁶⁸ As of 2006, the total amount of DACDF disbursed to the chiefdom authorities of Nimiyama was Le 593, 788, 991 (~\$237,516), yet not much had been done to enhance community development.¹⁶⁹

Although communities believed that environmental degradation was due to chiefs' corrupt practices, the power asymmetry between local chiefs and the central government was also a problem. Interviews revealed that the rate of environmental destruction by mining companies was alarming, yet their leaders acquiesced to the underlying mining activities.¹⁷⁰ There were strong accusations that some chiefs received bribes to turn a blind eye to environmentally unfriendly mining practices.¹⁷¹ While this allegation was strong, some chiefs maintained that even though they are custodians of land, the central government's power over corporate mining concession supersedes those of chiefs. A number of key informants lamented that while fees were paid for

¹⁶⁸ Interviews with religious leaders, elderly persons, teachers, youths, and traditional leaders, and personal observation

¹⁶⁹ As of December 2006, \$1 was equivalent to 2,500 leones.

¹⁷⁰ Key informants at Sandor and Nimiyama chiefdoms.

¹⁷¹ Views of diggers and youths focus groups in Nimiyama and Sandor Chiefdoms.

reclamation and rehabilitation of mined areas, land restoration was not done.¹⁷² Some chiefs pointed out that the Ministry of Mineral Resources (MMR) collected reclamation fees of 200,000 leones (~\$66) per mining plot but had not supported land reclamation in their chiefdoms. Thus environmental degradation stemmed from local and national regulatory problems (see chapter 6 for an empirical assessment of environmental degradation).

Another controversial issue that has created acrimony in mining communities is the inaccessibility of Environmental Impact Assessment (EIA) documents and corporate lease agreements to mining communities. A number of respondents (24.1%) noted that inaccessibility of EIA reports to local residents was the primary source of community-traditional leaders' conflicts, while others (14.7%) underscored the inaccessibility of corporate lease agreements as the major source of contention. A number of people within mining communities maintained that since traditional leaders (who had copies of the documents) were reluctant to release these documents, they were supportive of some opaque practices of mining companies inimical to community development.¹⁷³ Some chiefs, however, affirmed that EIA cannot be accessible to all as most local residents could not understand such a technical document due to high illiteracy rate. They underlined that they would not support any EIA report that was not in the interest of their chiefdoms. In general EIAs were not accessible to mining communities, but even if they were available, most of these communities had limited power and capability to monitor the activities of mining companies.

¹⁷² It should be noted that the corporate mineral policy (2003) underscores environmentally responsible mining yet this is far from being the case.

¹⁷³ Youth and diggers focus groups, interviews with elderly persons, and advocacy officials, Spring 2008

Another contentious issue was chiefs' attitude towards endorsement of artisanal mining documents. Some respondents (9.4%) pointed out that increasingly chiefs had refused to sign artisanal mining licenses resulting in devastating economic effects on them. Key informants and focus groups echoed this view. According to the 2005 Artisanal and Small Scale Mining Policy, the traditional leader must endorse the document for the allocation of a mining plot in his/her chiefdom, failure of which the miner cannot obtain license. However, these plots were increasingly being allocated to mining companies. It was believed that some chiefs had vested interests in mining companies and that some owned shares in industrial ventures, creating allegations of conflict of interest as the chiefs favored industrial mining instead of defending artisanal mining.¹⁷⁴ However, the diamond reform measures supported by donor agencies and the World Bank aimed at utilizing 'diamonds for peace and development' had created structures that prioritized industrial mining. In line with such reforms, traditional leaders received directives from central government mining officials that mining plots in specific areas should not be re-assigned, or new licenses for artisanal mining must not be issued.¹⁷⁵ This was increasingly the case in Sandor and Nimiyama Chiefdoms where African Minerals (formerly SLDC) and Milestone Companies operated. Therefore government's exclusive rights over minerals undermined chiefs' power over land allocation, thus placing chiefs in confrontation with their subjects.

The aforementioned issues have resulted in accumulated grievances against powerful traditional leaders and growing militarism especially among youths. These have been manifested through protests and violent confrontation. Youths in Nimiyama,

¹⁷⁴ Interview with an official formerly of the Peace Diamond Alliance.

¹⁷⁵ Interviews with town chiefs and paramount chiefs in Sandor and Nimiyama chiefdoms.

Sandor, and Nimikoro chiefdoms demonstrated against their traditional leaders whom they felt were in support of companies for personal gain while community development was shelved.¹⁷⁶ Such protests included occupying the chief's compound or protest matches along the streets.

In sum, the sources of growing grievances of mining communities against chiefs included issues related to alleged corrupt practices and preferences for industrial mining over artisanal mining. Some of these issues have also triggered conflicts between communities and mining companies.¹⁷⁷

5.4.2 Conflicts between Mining Companies and Communities

Access to land and the power relations surrounding it have created corporation-community conflicts. A number of respondents (32.2%) pointed out that limited access to land for mining was a major driver of conflicts between local residents and corporate entities. There was asymmetry in power relations surrounding access and control of land for diamond mining. As in most sub-Saharan African countries, the GOSL retains the rights to sub-surface minerals, and has increasingly granted mining concessions to large-scale, predominantly foreign owned mining companies.¹⁷⁸ There were instances in which the Ministry of Mineral Resources (MMR) may issue prospecting and exploration licenses to companies in the same locations where artisanal licenses had been issued.¹⁷⁹ This shows how much they were willing to bend to corporate interests.

Part of the problem stems from the fact that the GOSL had to respond to the pro-industrial mining dictates of the World Bank Group (WBG). Even though the chiefdom

¹⁷⁶ Youth focus groups in Nimiyama, Tankoro, Nimikoro and Sandor chiefdoms

¹⁷⁷ The civil war officially ended in January 2002 and most mining companies started operates in 2003.

¹⁷⁸ Interviews with paramount chiefs of Tankoro and Nimikoro Chiefdoms.

¹⁷⁹ During semi-formal interviews, several respondents maintain that their land have been allocated to companies even though they have current mining licenses. This was more evident in Sandor chiefdom.

mines committee chaired by the paramount chief is mandated to allocate land for mining, their power is limited as the GOSL through the Minister of Mineral Resources (based on the recommendation of the Mineral Advisory Board) gives directives to traditional leaders to issue leased land for corporate mining.¹⁸⁰ The GOSL responded to this (WBG) pressure. Further, mines authorities maintained that the GOSL received appreciable revenue from corporate mining, which can enhance economic development. Therefore traditional authorities should work in the interest of national development.¹⁸¹ This clearly illuminates prejudicial implementation of policy and conflicting local and national interests. In fact, mining companies executed most mining documentation with the central government, after which chiefs were directed by the central government to append their signatures to the documents. Thus sociospatial scale has agency in marginalizing local interests in favor of national ones.

In defense, authorities of industrial mining companies maintained that the problem emanated from intrusion of diggers into their officially leased concession areas. They asserted that they had paid all taxes and fulfilled all other requirements as stipulated in the 1994 Mines and Mineral Act and other mining agreements between companies and the GOSL.¹⁸² For them, the major source of conflict was that some diamond diggers intruded in companies' concession areas and mined illicitly. Such action demonstrates the complexity between power and agency of actors in struggles over resource access and utilization. While mining companies are the legitimate right holders of mining concessions, and despite the power asymmetry, local residents still mined company's

¹⁸⁰ Interviews with traditional leaders in Kono District, Spring 2008

¹⁸¹ For instance, KHL pays an annual royalty of \$200,000 to the GOSL in addition to other fees and taxes.

¹⁸² Interviews with the Community Relations Officers of two industrial mining companies operating in Kono District, summer 2009.

land illicitly. In spite of numerous complaints, mines and local authorities acted very slowly in halting illicit mining activities. A senior company official believed that some of the illicit miners had strong political connections and that was why it took so long for authorities to advise them to desist from such practices (Awoko, 2006).¹⁸³ Indeed, local authorities and the GOSL often double-dealed as they wanted to appear good to their political constituency.

There was also a strong belief that mining companies failed to adhere to provisions of mining agreements. A number of respondents (31.1%) indicated that the major issue that triggered conflicts was that companies failed to comply with lease agreements. While mining companies were not required by law to undertake community development projects, most of them voluntarily included some form of development projects in their initial lease agreements. Most companies fulfill some of the promises, though not all. Milestone Company initially did not fulfill any of its promises but with persistent pressure from the community it eventually repaired roads and built a school in Waidallah town, Sandor Chiefdom. However, other promises like constructing new roads, water wells and a local court building were not fulfilled.¹⁸⁴ In fact, in 2006 the SLDC constructed and equipped a youth center in Tefeya Town, Sandor Chiefdom and built a market in Nimiyama Chiefdom. Still, the expectations of mining communities were generally too high. Nevertheless, considering the negative environmental and economic impacts to local communities, it made sense for companies to compensate local communities beyond government taxes and fees, especially when such 'compensation' was included in concession agreements.

¹⁸³ Interview with the Community Relations Officer of KHL.

¹⁸⁴ Interviews with an official of Milestone Company, elderly persons of Sandor, and a town chief.

Another precipitant of corporate-community conflicts was the non-compliance of resettlement agreements. The issue of local versus national priorities of central government is evident in the non-compliance of Koidu Holdings Limited (KHL) to a resettlement agreement.¹⁸⁵ Even though the company did not fully implement the resettlement program as agreed in the lease agreement, the GOSL allowed KHL to start blast mining in Tankoro chiefdom, part of Koidu Town (NMJD, 2007). However, a senior company authority contends that a resettlement program was not in the initial agreement signed in July 1995.¹⁸⁶ The concession area had been declared a reserve area since the discovery of kimberlite dykes in 1948. Local authorities and successive central governments failed to protect the reserve area and over time squatters developed. Independent sources revealed that though resettlement was mentioned in the initial agreement, it was not a well-defined resettlement program.¹⁸⁷ This is another example of a case where matters are more complex than they appear, and local communities take advantage of their increasing empowerment to meet their agendas. Some interviewees maintained that the GOSL gives premium to the steady flow of much-needed revenue from KHL while local issues like the effects of blasting mining and resettlement programs was given less priority.¹⁸⁸ This eventually led to growing resentment amongst affected people culminating in violent conflicts as illustrated in the ensuing discussion.

In 2003, government representatives met with a cross-section of the Koidu Community just to inform them about the commencement of the kimberlite mining

¹⁸⁵ It is imperative to note that the mining concession was granted to Branch Energy in 1996 by the military junta National Provisional Ruling Council (NPRC) and this company metamorphosed to KHL, which resurfaced in 2003 after the civil war. Branch Energy was given a mining concession as part of a deal with a related company Executive Outcomes which served as a security company that chased out the RUF from Freetown in 1995 and from the diamondiferous district of Kono that same year.

¹⁸⁶ The mining concession area covers 4 square kilometers.

¹⁸⁷ Interview with a senior citizen of Tankoro Chiefdom.

¹⁸⁸ Interview with elderly person that has been displaced by mining. Diamond diggers focus group

project (Jenkins Johnston Commission Report, 2008). It was reported that some community members that included two junior chiefs strongly opposed the granting of a mining concession to Koidu Holdings Limited (KHL) because the potential social and environmental impacts were considered inimical to the Tankoro community. They were arrested and detained for a considerable period of time and later released. The fact that the GOSL exercised its coercive power by detaining some of them and issued a mining concession to KHL is an indication of power asymmetry between ordinary citizens and the GOSL.

Marginalized groups normally sent notices for impending demonstrations to authorities. For instance, on November 23 2007, a notice to demonstrate was sent by the 13-man Working Committee of APOA to the local police unit commander of Tankoro chiefdom in which they stated:

“... We have resolved to give 21 days’ notice to all authorities to see into our resolutions and to make sure that the 14 points stated by us are timely adhered to. ... if the stakeholders and government do not address the resettlement action plan between the affected property owners and the company [KHL] for plausible negotiations within the shortest possible period, then we will in no uncertain terms organize a peaceful demonstration in order for the nation and the international community to know our plight...”

On December 13, 2007 following a radio announcement a few days earlier that blasting would take place on that day, demonstrators came out in numbers outside the main entrance of KHL. The police were unsuccessful in convincing residents to vacate their houses considered at risk to the imminent blasting exercise and to stop the demonstrators wielding placards and slogans like “No Blasting- kill us today.” In spite of the presence of demonstrators and residents within the blasting envelope, blast mining

ensued (Jenkins Johnston Commission Report, 2008).¹⁸⁹ The crowd became irate and pelted the police with stones. In response the police opened fire with live ammunition that resulted in the death of two people while nine others sustained gunshot wounds.

Another major issue of concern was that the various groups in the community were not represented during corporate mining lease negotiations. Respondents (12%) considered the non-representation of local residents a major source of conflict between both parties. Focus groups and key informants indicated that only paramount chiefs and the mines engineer were consulted at the local level. Local perceptions were clearly evident that traditional authorities allocated and expropriated land. However, some chiefs noted that the central government did not discuss with them the intention of new companies. They just received instructions saying that company X would engage in prospecting and exploration activities in your area, or that company Y should be given a pre-determined area of land as mining concession and that the said company would pay a specified amount as surface rent to the chieftom committee headed by the paramount chief.¹⁹⁰ They noted that such directives adversely affected their role of apportioning land to local residents for artisanal mining. It illustrates how agency of scale can marginalize local communities for national interests. The conflicting interests of central government officials and traditional leaders and the lack of autonomy of the latter created misunderstanding and tensions in local communities that sometimes resulted in community-company conflicts.

Aggrieved marginalized miners/diggers used different protest actions against corporate entities some of which resulted in violence. In February 2008, for instance,

¹⁸⁹ Interviews with elderly people of Koidu,

¹⁹⁰ Interviews with two prominent paramount chiefs of diamondiferous chiefdoms.

youths of Nimiyama chiefdom (some of whom were diamond diggers) embarked on an occupation of the mining site of A.V. Charge Company in Kagama saying that they would stop the company from mining activities, as they needed information about the arrangement between traditional authorities and the company in relation to community benefits. Company authorities called in the police who tried to disperse the crowd through negotiation. Angry youths pelted the police with stones. In reaction the police beat demonstrators, fired tear gas to disperse the crowd and arrested youth leaders.¹⁹¹

Aggrieved diggers also utilized a company mining site for economic gains even though structural constraints were evident. In April 2008, diamond diggers in Koidu occupied the mining site (locally called “number 11 sand”) of Kariba Mining Company at Tankoro Chiefdom at night and illegally mined diamonds for two days. Traditional leaders and company authorities called in the police. Confrontation ensued between the militant diggers and security forces. Although the militant diggers were eventually dispersed they made way with some diamonds.

The issue of land compensation was also a source of corporation-community conflict. A majority of respondents (51%) said mining companies determined land compensation while a third of them said it was mining communities. Even though most landholders were normally consulted they had very little (if any) power in determining compensation. According to the 1994 Mines and Mineral Act (Article 26.3), fair and reasonable compensation should be given to the landowner by the mining enterprise based only on the surface value of the land. Compensation thus seemed to be arbitrary as companies determined what was considered fair and reasonable. Most landholders were

¹⁹¹ Focus group discussion with Nimiyama Youths, Interview with traditional leader of Nimiyama chiefdom.

of the conviction that compensation included the potential value of subsurface materials, and perceived actual compensation as unreasonable. The mineral law apparently placed land holders/owners at a weaker position as the power over compensation levels lay on mining companies. In most instances, the landholder was worse off socioeconomically as compensation was a one-time payment.

Issues related to inadequate land compensation and land grabbing brought affected local residents of Sandor Chiefdom at loggerheads with the SLDC. A very serious confrontation between local residents and the company occurred in 2006. While some received compensation, others said they did not as compensation was halted after a short period. They claimed that the amount given to chiefs was not exactly handed over to them and accused chiefs of siphoning part of the compensation.¹⁹² Dissatisfied residents of Tefeya town, Sandor Chiefdom attacked the company's mining site¹⁹³ Company workers had to call for police protection. Police pushed demonstrators and fired teargas to disperse the irate crowd.

In sum, unequal power relations amongst actors and the different motivations, agendas, and actions of the central government (through its MMR), chiefs, groups in mining communities, and mining companies have created tensions that at times resulted in conflicts between community and mining companies.

5.4.3 Conflicts between Diamond Diggers and Miners/Supporters

Reconfiguration of the sociospatial scale within which diggers and supporter/miners operate often resulted in conflicts. Respondents (48.5%) indicated that the major trigger of conflict was when diggers hide diamonds and sell them to a

¹⁹² Interview with elderly persons, religious leaders, and NGO officials.

¹⁹³ Interview with a senior worker of the SLDC, summer 2009.

miner/supporter that did not finance them. Interviewees said that when this happens, miners become furious because they have financed the mining activity. By selling diamonds to another miner/supporter diggers reconfigured the scale of transaction to increase their mineral revenues. The situation was complex when diggers were funded by two supporters and decided to sell to the one who expended less, thus fulfilling their economic agenda of receiving a bigger share of net profit after deduction of expenditure. In fact, some respondents (16.0%) said that the latter was the genesis of most conflicts. Others (16.9%) opined that the major bone of contention was that miners did not share winnings fairly. Diggers strongly believed that miners cheated them by giving them a lower amount of what they should actually receive.¹⁹⁴ Often, there is a dispute over the purchasing price of diamonds as indicated by some respondents (10.5%) and that of diamond diggers.¹⁹⁵

Conflicts also occurred between different diggers' groups at the mining pit level. This view was expressed by 98.7 % of respondents. A majority of them (75.4%) pointed out that the major precipitant of conflicts between diggers' groups was mining plot border disputes. Diamond diggers pointed out that when gangs mining adjacent plots had reached the sub-surface gravel, one group may encroach into the adjacent plot when they observed that there were rich gravels in the other plot or pit.¹⁹⁶ In other words, a group reconfigured the scale of extraction in terms of extent of their licensed lot in order to increase the likelihood of obtaining more diamonds. Many a time serious altercations

¹⁹⁴ USAID sponsored a number of diamond reform projects between 1999 and 2007 which included diamond valuation training of local residents.

¹⁹⁵ Information from diggers' focus groups.

¹⁹⁶ There is normally a marked line between portions of plots assign to gang of diggers.

ensued and some resulted in fighting and stabbing.¹⁹⁷ Some respondents (13.8%) said that sharing gravel amongst groups was the biggest trigger of conflict; others (10.8%) underlined perceived unfair sharing of ‘winnings’ amongst the different gangs as the major source of conflict.¹⁹⁸ A particular group of diggers may think that the other group had received a better share of winnings even though that group did not find diamonds. This also led to altercations although it rarely resulted in fighting.¹⁹⁹ Thus conflicts between diamond diggers emanated primarily because of sociospatial strategies aimed at enhancing economic gains for a group at the expense of the other.

5.4.4 Perceptions of Spatial Variation of the Intensity of Conflicts

There were variations in respondents’ perceptions of the intensity of conflicts in mining chiefdoms. A higher percentage of respondents perceived conflicts in Sandor and Tankoro chiefdoms as generally intense compared to Nimiyama and Nimikoro Chiefdoms (Figure 5.3).

¹⁹⁷ Interviews with miners, elderly persons, teachers, and information obtained from diggers’ focus groups

¹⁹⁸ Depending on the initial arrangement, gangs can share gravels before washing for diamonds or can wash diamonds first and share winnings received from the boss.

¹⁹⁹ Information from diggers and miners’ focus groups.

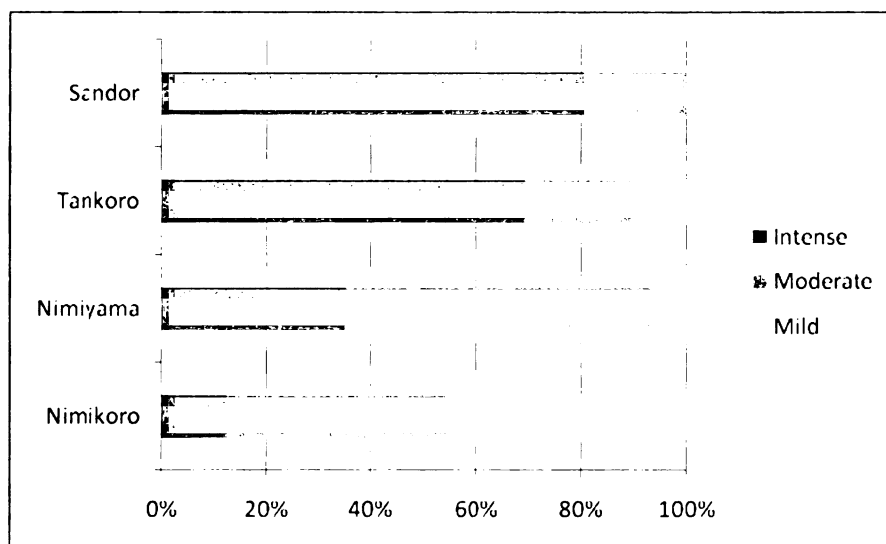


Figure 5.3 Intensity of diamond-driven conflicts in chiefdoms surveyed

Although the aforementioned factors influenced the variable intensity of conflicts, one plausible reason was the growth of prospecting, exploration and mining companies in all but Nimikoro Chiefdom. Over fifty years of corporate mining (the SLST/NDMC) must have depleted diamond deposits that were commercially viable in Nimikoro Chiefdom. In general mining activities had declined in Nimikoro Chiefdom unlike the other chiefdoms where there were a number of new mining areas resulting in increasing competition for access and control of land. Perceptions of moderate conflicts were generally high in Nimiyama and Nimikoro Chiefdoms while that for mild conflict was high only in Nimikoro chiefdom.²⁰⁰ This could be attributed to limited corporate mining activities in these chiefdoms and the lack of fresh mining land.

In sum, struggles over access and control of diamonds were manifested in disparate ways. These included occupation of mining sites, fighting, and confrontation between demonstrators and companies' security officers. The occupation of the mining

²⁰⁰ No respondent in Sandor perceive conflicts as mild.

sites of AV Charge and Kariba Mining Companies illustrates ways of resistance of aggrieved groups who wanted to turn the balance of power in their favor. The washing of gravel in KMC was an effective though short-lived way in which diamond diggers can use their operational scale for economic gains even though structural constraints were evident. The frequency of such conflicts and the growing militancy amongst actors (especially towards companies) needs to be resolved to ensure peace and development in mining communities

5.4.5 Measures to resolve Conflicts in Diamondiferous Communities

Respondents suggested some conflict resolution measures for their communities. As shown in table 5.2 the three main measures suggested were that the MMR should educate both parties about mining procedures, the three parties (the central government, mining companies and communities) be involved in the formulation of mining policies, and that proposed mining legislation be discussed with communities before enactment.

Table 5.2 Conflict resolution: communities and traditional leaders

Measures	Frequency	Percent
MMR should educate both parties about mining	57	34
Three parties should be involved in law making	45	27
Laws be discussed with communities before enact	39	23.4
Sensitization between communities and TA	10	6
Communities should have access to lease agreement	6	3.6
Return land to original landowners	4	2.4
Companies ask communities about mining views	4	2.4
Anticorruption to address impasse	2	1.2
Total	167	100

There was a general belief that mining communities should be adequately represented and that such a measure would reduce the possibility of friction between them and traditional leaders. A number of interviewees suggested that the MMR should resolve mining problems between communities and traditional leaders²⁰¹

Adequate community representation was also considered as a major strategy to mitigate corporation-community conflicts. In fact respondents suggested that there should be greater representation of mining communities in mining arrangements as their representatives could inform them about the potential economic and social benefits (see table 5.3).²⁰² An elderly person noted that mining communities were marginalized as there was not a Kono representative in the national Mineral Advisory Board even though the district accounted for about 60% of the country's annual diamond production.

Table 5.3 Conflict resolution: mining companies and communities

Conflict Resolution Measures	Frequency	Percentage
Involve communities in lease agreement	98	53.3
Construct meaningful infrastructure	28	15.2
Adequate compensation for landowners	20	10.9
Involve communities in EIA preparation	12	6.5
Construct standard houses for re-settlers	11	6
Provide more plots for artisanal miners	6	3.2
Employ those in mining communities	5	2.7
Give land to communities, sell if willing	4	2.2
Total	184	100

Commitment of companies to meaningful infrastructure development in mining communities was also considered a measure of conflict mitigation. The general perception of community members was that a speedy implementation of infrastructure

²⁰¹ Interviews with elderly persons, female license holders, religious leaders, and NMJD officials.

²⁰² Interviews with youth leaders, elderly person, religious leaders, and advocacy group officials

development would minimize conflicts between them and mining companies since development was a primary concern of mining communities.

Nevertheless, a number of local and national stakeholders had contributed in minimizing conflicts. The Campaign for Just Mining (CJM) in particular had championed the cause of affected property owners resulting in formal recognition of their cause. Community Relations Officers (CRO) of mining companies had also played their role (though unsuccessful at times) in informing mining communities about the activities of their companies and the need to work with companies amicably.²⁰³ Some chiefs have also been instrumental in convening regular meetings with their people during which they called on them to exercise patience and assured them that they would ensure that companies fulfill their promises.²⁰⁴

Commitment of companies to meaningful infrastructure development in mining communities was also considered a measure of conflict mitigation. The general perception of community members was that a speedy implementation of infrastructure development would minimize conflicts between them and mining companies since development was a primary concern of mining communities.

The issue of fair land compensation was also cited as a mechanism to resolve conflict. Local residents maintained that adequate compensation of landowners would considerably reduce friction between communities and companies. This is a rather complicated issue though, as the central government, subject to the provisions of the 1994 Mines and Mineral Act, does not take into consideration the value of subsurface elements but only the economic value of the land and what features are on the land at the

²⁰³ Interview with the CRO of KHL and the SLDC.

²⁰⁴ Interview with town chiefs of Yengema and Tefeya Chiefdoms and with a senior official of Milestone Company.

specific date. Nevertheless, increasing the power of landowners in negotiating compensation with companies may mitigate conflicts.

Local organizations have also sought ways to minimize conflicts. As a result of numerous conflicts between Lebanese supporters and diggers due to alleged exploitation and marginalization of diggers and the debt bondage, the PDA through the Integrated Diamond Management Program (IDMP) decided to facilitate formation of miners' cooperatives and establish a direct linkage between the cooperatives and international buyers so as to increase the economic gains of diggers/miners of Kono District (Temple, 2008).²⁰⁵ Local chiefs and officials of the mines department have also been involved in resolving conflicts between miners/supporters and diggers while matters of extraneous circumstances are handled by the police department. The general perception of artisanal miners/diggers was that in adjudicating diamond disputes, local chiefs and the police department favored the economically powerful Lebanese/Maraka supporters most of whom had strong networks with influential politicians and government agents at the national level and locally.

In sum, measures to mitigate corporation-community and community-traditional leaders conflicts in diamondiferous areas could involve adequate community representation in mining programs and educating stakeholders in mining communities. Adequate compensation should also be paid to mining communities. Peaceful resolution strategies that were initiated by a consortium of donor agencies and local mining-related NGOs should also be sustained. Integrating mitigation strategies of mining communities with those of established organization would be useful.

²⁰⁵ While this was a welcome gesture it was a pilot based project of limited scope and was short-lived.

5.4.6 Discussion: Actors, Structures and Conflicts over Diamonds

Conflicts between communities and traditional leaders have been influenced by unequal power relations, diverse interests and wider political and economic structures. As custodian of the land chiefs have absolute power over their subjects. While corruption of local leaders is cited as a major source of conflicts between communities and traditional leaders, a closer examination can unravel the complexities. Lack of transparency and accountability of the use of chiefdoms' mineral revenue is partly due to lack of oversight by the central government. Part of the problem stems from the fact that government officials do not want to hurt chiefs as that can reduce the ruling party's chance of re-elections as chiefs have considerable power and influence over their communities. Furthermore, lack of disclosure of EIA reports and mining lease documents to mining communities demonstrate lack of transparency and high suspicion of corruption of traditional leaders.

The dialectics of power and agency are also manifested in corporation-community conflicts. Limited access to land for artisanal mining amidst structural reforms that give preference to industrial mining is a major bone of contention. While local people accused chiefs of favoring companies, a closer examination pinpoints government's move to support companies and the WBG in the interest of national development. The situation is further complicated with diamond reform measures dictated by international agencies (the WBG, DFID) as land for artisanal mining is further reduced. As of 2007, 94% of artisanal mining land has been assigned to companies for prospecting, exploration or mining (Le Billon and Levin, 2009). Artisanal diamond miners would therefore be displaced as companies expand mining activities. For many who would not gain

employment, their socioeconomic status would be worse off. Notwithstanding the power of mining authorities and chiefs, and the legal structure which gives legitimacy to corporate entities, disempowered local miners employ liberatory strategies as a reactionary move to exploitation. They trespass companies' concession and mined illicitly. Although such action could eventually trigger corporation-community conflicts, illicit miners have been able to utilize agency to satisfy their economic agendas.

Asymmetrical power relations between national and local authorities and industrial mining were also manifested in the non-adherence to clauses in mining lease documents. Invariably companies breach development promises and resettlement agreements with impunity knowing that the government's primary goal is mineral revenue collection. Yet such action results in resistance by the disempowered which can result in violent action disrupting mining, and leading to loss of revenue for government, mining companies, and mining communities. It may also threaten state's security if such militant action spreads to other parts of the country where industrial mining activities are prevalent. The case of KHL demonstrates the socioeconomic impact in the aftermath of violent conflicts.

Unequal power relations between communities and companies are also manifested in land compensation. The notion of adequate and reasonable compensation (as stipulated in the mineral act) is rather ambiguous and subject to varying interpretations by companies. Invariably companies have added leverage over affected land owners/holders in mining communities with negative economic implications for local residents. Furthermore, most landowners think that the value of sub-surface

minerals is included in land compensation, which is not the case. Such misunderstanding is also a source of friction.

Social groups have been established at the district and chiefdom levels in reaction to exploitation by the powerful. Some of them adopted radical approaches to achieve their ends. The occupation of corporate mining area and the washing of gravels belonging to Kariba Mining Company have proved that social groups can resist the dominant power of state and mining authorities and achieve their economic and liberation agendas, though short-lived. Such actions have negative economic implications for mining communities and the central government as continued violence not only disrupts mining, but could also eventually lead to the closure and departure of industrial mining companies.

In a community faced with considerable transformation in mining following the expansion of industrial mining, the establishment of formalized conflict resolution mechanisms is of prime importance. Currently, the CJM is the main non-government actor involved in resolving conflicts between communities and companies. Yet, some mining companies have accused them of being pro-mining communities. It would therefore be necessary to establish an institution with legal powers to resolve diamond-induced conflicts emanating between companies and mining communities.

There have also been sporadic occurrences of conflicts between miners/supporters and diamond diggers. National mining regulations (i.e. the 1994 Mines and Mineral Act and the 2005 Artisanal and Small Scale Mining Policy) do not mandate a strictly formal and legally binding relationship between miners/supporters and diggers. This has created loopholes that are utilized by both parties in trying to outsmart the other. It is therefore

necessary for the mines ministry to formulate artisanal mining policies that would require a legal agreement between all parties involved in artisanal and small scale mining with sanctions against violators irrespective of socioeconomic status. Such policies should include the terms of labor arrangements and ‘winnings’ sharing terms.

5.5 The Geography of Diamonds and the Resource Curse

This section examines the third hypothesis: *geographically diffused and remotely-located, but highly valuable natural resources are more a liability than an asset.*

The geography of diamonds can influence illicit diamond mining in the district. In response to a possible spatial association between remotely located mines and illicit mining in Kono District, 71.1 percent of respondents stated that illicit diamond mining was greater in remote areas than closer to towns. Various reasons were advanced in support of this association. These included the lack of logistics for distant monitoring (62.5%); dearth of mines monitors to cover the geographic extent of alluvial diamond mines (21.2%). The diamond fields of Kono cover about half of the district (about 2,800 square kilometers), and with only 64 ill-equipped mines monitors patrolling this area (part of which is covered with thick forest), it becomes an arduous task (MMR 2008d). As shown in Figure 5.1, alluvial diamonds are spatially dispersed in the district. In fact, 10.3 percent of respondents maintained that remote areas were not monitored at all. This association between ineffective monitoring and remoteness of mines (facilitating illegal mining) to a reasonable extent conforms to Le Billon’s conceptualization of the political geography of the resource (Le Billon, 2005).

Chi-square analyses (cross tabulation) was conducted to determine whether there were significant associations between: 1) perceptions of the effectiveness of national mining regulation over diamond mining and the extent of illicit mining in mining communities; and 2) Perceptions of the effectiveness of local mining regulation and the extent of illicit mining. These were based on respondents' ranking of mining regulations and the extent of illicit mining. Significance was set at the 95% confidence interval. Results indicated that there was no significant association between perceptions of the level of national mining regulation and the extent of illicit mining ($p>0.05$). However, there was a significant association between perceptions of the level of effectiveness of local mining land regulation and illicit diamond mining ($p<0.05$). The association between perceptions of local mining land regulation and illicit diamond mining could be attributed to the following factors. Chiefs allocated land for artisanal mining and government mines monitors and chieftom mines monitors were responsible for mines monitoring. Furthermore, local mining regulation was more applicable to artisanal and small scale mining which was widely practiced and regulated by local administrators. Thus the extent of illicit mining was associated with effective/ineffective mining land regulation at the local level.

Spatially diffused diamonds and illicit mining may have some relationship. In Kono District, diamonds are spatially dispersed in central and western parts of Kono District. As regards the positive association between spatially diffused diamonds and illicit mining, majority of respondents (59.7 %) said that there were linkages between the two, while 40.3 percent said the spatial dispersal of diamonds did not influence illicit

mining.²⁰⁶ Le Billon (2005) emphasizes diffuse resources as more susceptible to illicit exploitation than point resources – kimberlite diamonds – that are concentrated in small geographic locations, which require highly mechanized input to mine and therefore can be easily monitored. Findings corroborate Le Billon’s conceptualization of the association of spatially diffused diamonds and illicit mining.

Unlike alluvial deposits, the spatial geography of Kimberlite diamonds hinders illicit extraction. Proven deposits of kimberlite diamonds are located in Tankoro Chiefdom in Kono District and Lower Bambara Chiefdom, Kenema District. The Kimberlite mining pits in these two locations are not associated with illicit mining as they are confined to a limited area and could only be mined with sophisticated machines and technical knowledge.

A spatial factor that facilitates the smuggling of diamonds from the Kono District is proximity to the Guinea and Liberian borders. Interviews showed that proximity to border and the extent of the border had made it less difficult for diamond smugglers. A paramount chief asserted that there were at least 39 entry points to Kono’s 14 chiefdoms, and security officers did not police most of these entry/exit points.²⁰⁷ The issues of porous borders and the lack of monitoring devices were also underscored by a senior official of NMJD. Scale/space as agency is also manifested in diamond smuggling. Anecdotal evidence also suggests that most smugglers from neighboring countries capitalized on weak border controls and the economic desperation of illegal artisanal miners. As these miners are always in need of cash, illegal dealers pay higher than what

²⁰⁶ Diamonds are spatially dispersed in central and western parts of Kono District.

²⁰⁷ He said that the district asked for 900 police to monitor activities in the entire district but the central government sent only 300 men.

diamond dealers in the cartel would pay and then travel by road to Guinea from where these illicit diamonds enter the global market (Perl Auction, 2008).

This section has demonstrated that the spatiality of diamonds has undermined official diamond mining and trading. It has shown that the remoteness of diamonds from government's control and the spatially disperse nature of alluvial diamonds facilitated illicit diamond exploitation. These associations – remoteness and spatial dispersal of diamonds – conform to Le Billon's (2005) conception of the political geography of the resource which aids the illegal activities of illicit actors in the diamond industry.

5.6 Conclusion

This chapter has discussed the extent to which a resource curse existed in the Kono District based on three major impacts: illicit diamond mining and trading; socioeconomic condition; and diamond-induced conflicts. It has shown that illicit diamond mining is a resource curse for the mining communities in particular and the central government in general as official mining license fees are reduced. However, it is economically gainful for the minority namely: corrupt chiefs, government mines monitoring officers and the illicit and legal dealers and supporters who derived most of the benefits. It has shown that smuggling leads to sub-optimal mineral revenue for the central government in particular and for the mining communities also. It also presents a security threat and undermines the global regulatory system – the KPCS. Findings suggest that effective implementation of mining policies, improved human capacity; economic restructuring of diamond marketing and incentives to mines monitors and security personnel will minimize illicit exploitation and increase the much needed official mineral revenue for development purposes. Until these conditions are met, illicit

exploitation for the most part remains more of an economic liability to mining communities and the country as a whole than an asset for socioeconomic development.

With reference to the socioeconomic dynamics of diamond exploitation, unequal power relations amongst actors with regards to access and control of land, labor and capital has created socio-political and economic outcomes that are less favorable to diamond diggers and miners. The role of social relations and networks and government's incapacity to effectively monitor diamond exploitation has created socio-economic outcomes that are disadvantageous to diamond diggers, the district in particular and the country in general. Although dealers/supporters are expected to get higher diamond earnings, obtaining 6.2 times more than diggers is significantly high. In fact, local farmers' earnings were better off than diamond diggers, which was an indication of the economic dimension of the resource curse amongst diamond diggers. Furthermore, mining incomes for diamond diggers were over 700 times lower than their South American counterparts. While diamond diggers earned at least \$7.50 per day in South America their counterparts in Sierra Leone earned about \$1 per day. This demonstrates that artisanal diamond diggers in Sierra Leone are more exploited than in other parts of the world. These socioeconomic issues evince that diamonds are increasingly becoming a resource curse for most diamond diggers/miners in diamondiferous communities, especially with dwindling diamond production and a reduction in artisanal diamond mining land. Findings indicate that only those who derived benefit from direct diamond sales improved their economic and social status in post-conflict Kono. It therefore calls for the need to modify the extant patron-client system so that the socioeconomic conditions of the tens of thousands of diggers would be improved. With declining output

from artisanal mining, livelihood diversification could be a more realistic avenue for poverty alleviation amongst diamond diggers and miners.

The chapter also examined the major conflicts over diamonds in Kono District. It has underlined the unequal power relations amongst the various actors in access and control over land, the prioritization of industrial over artisanal mining, the perceived corrupt practices of traditional leaders, and the inadequate representation of community groups in mining program organizations. It has also discussed the spatial variation of the intensity of conflicts in diamondiferous chiefdoms. The chapter has shown that grievances and perceived social injustices had resulted in conflicts, a clear manifestation of the resource curse. Resource abundance and violent conflicts at the community level are a cause for concern especially with the growth of industrial mining companies and the diminution of artisanal mining. In order to minimize conflicts between actors, the views of actors at the community level and those of organizations (donor agency and local NGOs) should be considered when a formalized conflict resolution mechanism is established.

For the most part, Kono District is still plagued with symptoms of the resource curse. While illicit exploitation has reduced the district mineral revenues, the socio-economic dynamics of diamond exploitation have perpetrated significant economic disparity between dealers/supporters and diggers. Diamond-driven conflicts especially between communities and mining companies were also inimical to development. The environmental impacts of diamond mining should also be examined further and are the subject of the next chapter.

CHAPTER 6: ANALYSIS OF ENVIRONMENTAL DEGRADATION IN KONO DISTRICT

6.1 Introduction

This chapter assesses the environmental impacts of diamond exploitation in Kono District in order to determine the magnitude of the environmental dimension of the resource curse at the community level.²⁰⁸ In a predominantly rural community where diamond mining results in domination and exploitation of many local residents, land-based resources serve as a pivotal livelihood option.²⁰⁹ A degraded environment therefore has local livelihoods implications for many rural dwellers. Data for this chapter were obtained from remote sensing analysis of satellite images, household surveys, key informant interviews, focus groups, and secondary data (published and unpublished works). In order to assess the environmental dimensions of diamonds as a resource curse, the chapter compares environmental conditions in mining and non-mining chiefdoms, examines the principal causes of land use/land cover change, and also determines the spatial extent of land use/land cover during the civil war compared to non-war periods. A spatial analysis of the environmental dimension of the resource curse is employed in order to determine the role of civil war in land use/land cover change. Further, land cover change (1986-2007) in the diamond and non-diamond mining chiefdoms is assessed. The chapter also examines local perceptions of environmental degradation, trends in agricultural productivity, and the state and trends of forest cover in the mining and non-mining chiefdoms. The chapter also addresses measures that could mitigate environmental degradation in the district. This is followed by a brief discussion of the

²⁰⁸ This is parallel to what Godman and Worth (2008) refer to as the ecological curse of mineral exploitation.

²⁰⁹ Land-based resources refer primarily to agriculture, forest resources.

effectiveness of government mining and environmental policies in relation to the interests, actions, and roles of other diamond stakeholders, followed by policy implications.

6.2 Environmental Degradation in Mining and Non-Mining chiefdoms

6.2.1 Local Perceptions of Environmental Degradation

There was widespread belief that environmental degradation had occurred in the mining and non-mining chiefdoms of the district. A majority of respondents (92.9%) in the mining chiefdoms believed that environmental degradation was evident in their communities while the entire sampled population in the non-mining chiefdoms stated that environmental degradation had occurred in their community.

Table 6.1 Local perceptions of the biggest environmental problem

Environmental Problem	Mining Chiefdoms		Non-mining Chiefdoms	
	Frequency	Percentage	Frequency	Percentage
Deforestation	94	42.5	98	81.7
Un-reclaimed pits	57	25.8	-	-
Pollution of streams	43	19.5	1	0.8
Soil degradation	14	6.3	14	11.7
Landslide	8	3.6	7	5.8
Disrupted drainage	5	2.3	-	-
Total	221	100	120	100

Although deforestation was regarded as the biggest environmental problem in the mining and non-mining chiefdoms, the magnitude varied (see table 6.1). A higher percentage of respondents in the non-mining areas compared to those in the mining areas considered deforestation the biggest environmental problem. Nonetheless, interviews

indicated that diamond mining had caused considerable deforestation.²¹⁰ The once forested Nimimi Hills had been substantially cleared of vegetation and places like Tefeya, Fenema, and Kambiya in the Sandor Chiefdom and Sewafe in the Nimiyma Chiefdom were amongst areas badly deforested. Others noted that though mining had generally resulted in deforestation, it was more visible along riverbeds.

Besides deforestation, respondents mostly in mining chiefdoms, cited a number of mining-induced water related problems. They identified environmental problems such as un-reclaimed mining pits, pollution/contamination of streams and rivers, and disrupted drainage of streams and rivers (Table 6.1). Key informants' perceptions of water-related problems in mining chiefdoms corroborated those of survey respondents. Many of them said that several mine-out pits have been left exposed and that most have been transformed to artificial lakes. Personal observation showed that a considerable amount of artificial lakes had been created in artisanal mining areas in particular. Some key informants noted that the un-reclaimed lands have reduced the quantity of land available for other land uses (including farming). Furthermore, water-filled pits have served as breeding grounds for mosquitoes (Figure 6.1). Some key informants pointed out that mining activities have contaminated rivers, streams, and sub-surface water. This has resulted in higher incidences of typhoid and dysentery since pipe-borne water was not available. In fact, mining was blamed for the drying up of several streams. A number of them also noted that mining has resulted in the diversion of river courses and that the Bafin River was the most affected.²¹¹ Thus mining-induced water related problems have livelihood and health implications.

²¹⁰ Key informants included elderly persons, NGO officials, and traditional leaders.

²¹¹ Interviews with local residents of Kono District.

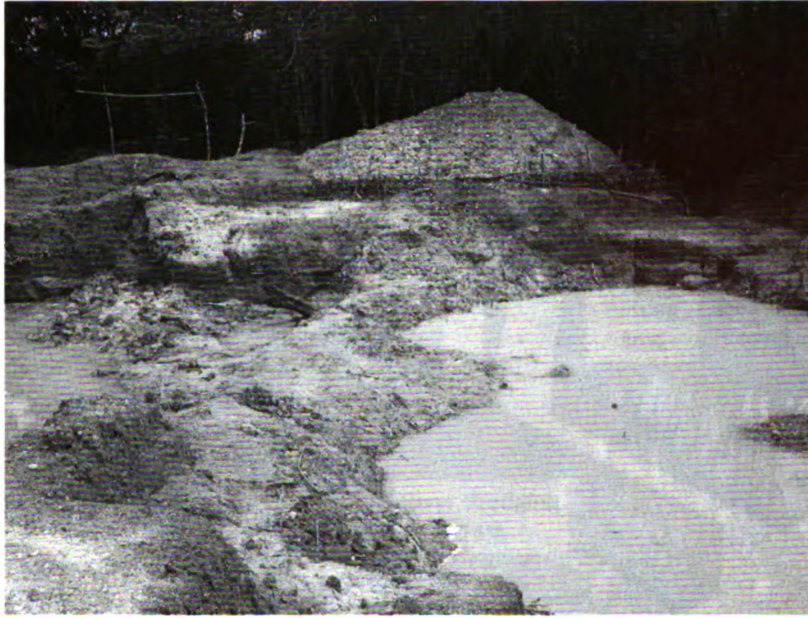


Figure 6.1 Water-logged mining pit in Sewafe, Nimiyama Chiefdom

Soil erosion was also considered a major environmental problem in both communities. Nonetheless, a higher percentage of those in non-mining areas indicated that it was a major environmental concern. In general soil quality issues are more acute as a direct means of agricultural production in non-mining areas than mining areas. Nevertheless, soil degradation was also underlined by some key informants. A senior NGO official believed that soil degradation was of utmost concern in mining communities as vast expanses of land have been stripped of topsoil. The Chief Administrator of the district's council said that mining activities (both mechanized and artisanal) have badly affected the soil. In a similar vein, an elderly person noted that in some industrial and small scale mining areas bedrocks were clearly visible as top soil had been removed.²¹² In other words, mining-induced soil degradation was attributed to rudimentary mining and processing methods (World Bank, 2008). Thus, even though soil

²¹² He noted that the use of a machine known as dumper line is partly responsible for damaged soil.

erosion was a problem in both communities, the excavation activities accentuate soil degradation in mining chiefdoms.

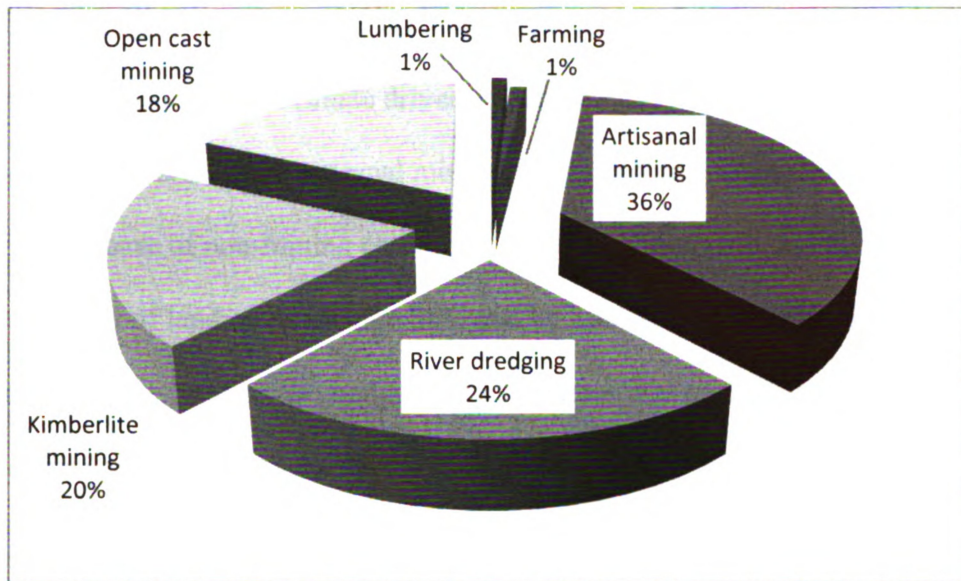


Figure 6.2a Perceptions of the proximate causes of land cover change in mining chiefdoms

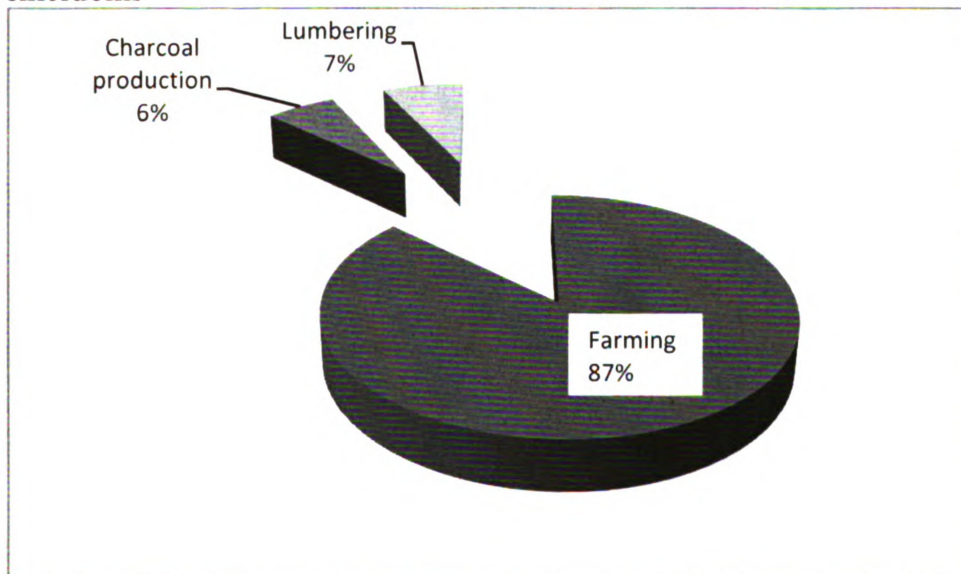


Figure 6.2b Perceptions of proximate causes of land cover change in non-mining chiefdoms

Land cover change that is triggered by proximate and ultimate causes was also identified as a major cause of environmental degradation in the district. As shown in figure 6.2a, respondents in mining communities perceived different mechanisms of diamond mining as major proximate drivers of land cover change. According to them the major proximate drivers were artisanal mining, river dredging, kimberlite, and open cast mining. In the case of non-mining chiefdoms, farming was considered the biggest proximate driver of land cover change followed by lumbering and charcoal production (figure 6.2b). Thus, land cover change in the two areas was primarily driven by the principal primary economic activity.

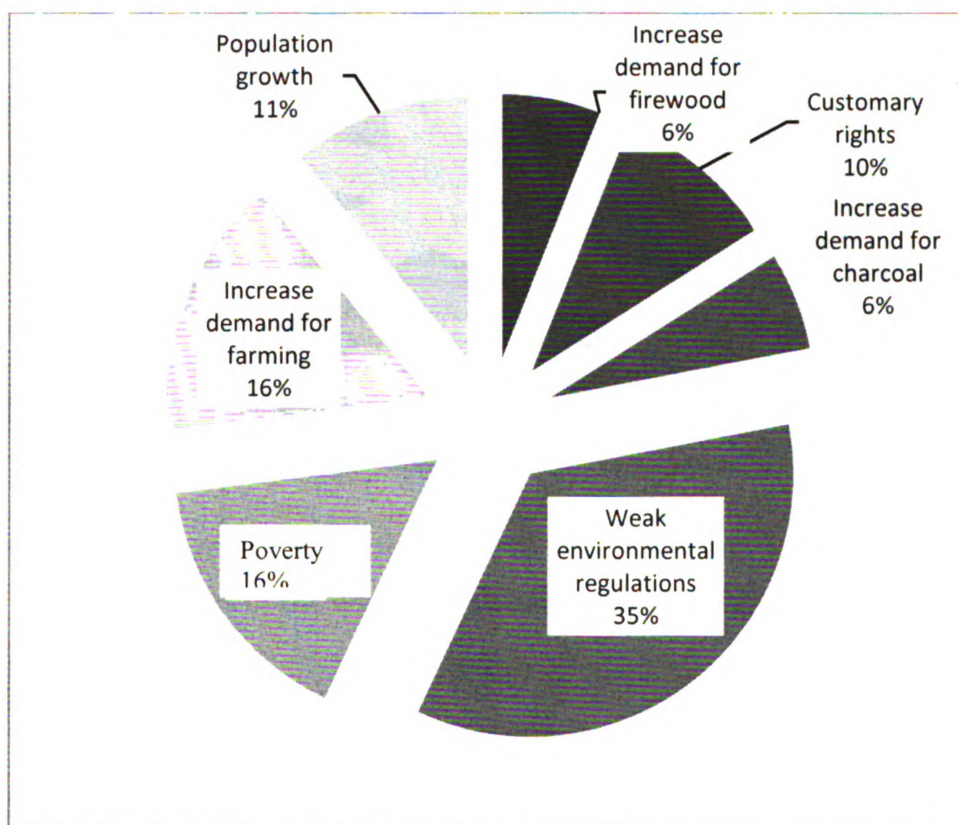


Figure 6.3a Perceptions of the underlying causes of land cover change in mining chiefdoms

While proximate causes were confined to local scale dynamics, respondents underscored a number of factors that transcended their local levels – ultimate causes of land cover change (Figures 6.3a and 6.3b). A third of those in mining chiefdoms maintained that inadequate national mining and environmental regulation was the major underlying cause yet less than a tenth of those in non-mining communities expressed similar views.

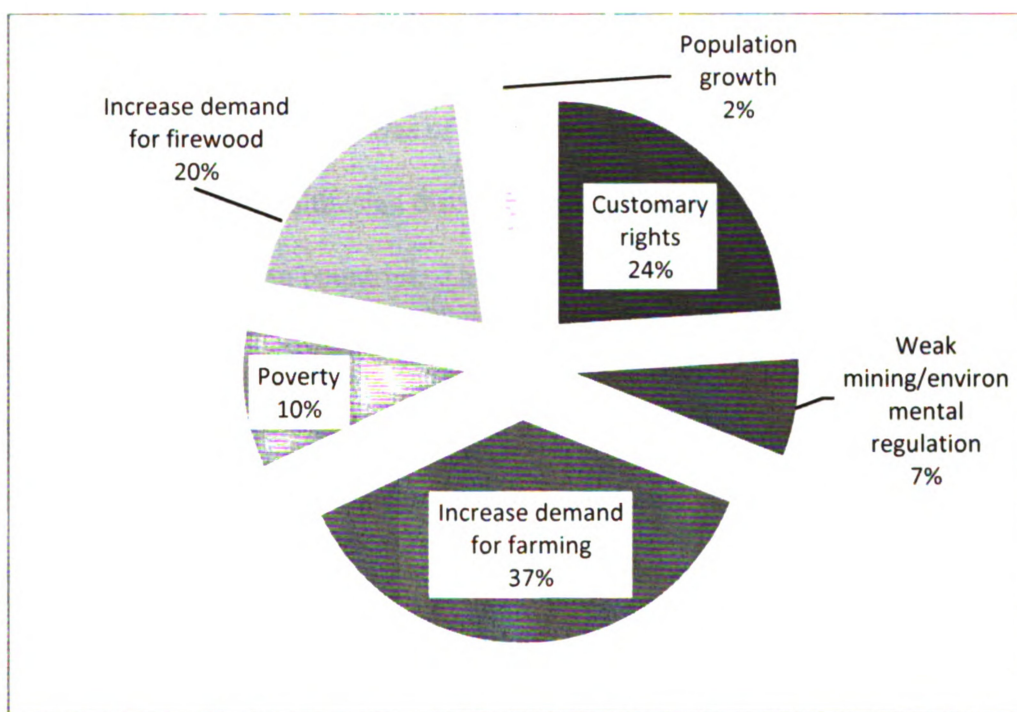


Figure 6.3b Perceptions of the underlying causes of land cover change in non-mining chiefdoms

A number of key informants pinpointed inadequate environmental components of national mining regulations. Consequently, there were a number of environmental problems in the mining communities of Kono District.²¹³ Other key informants emphasized that monitoring and enforcement of policies geared towards environmental

²¹³ Interviews with local residents of Kono District.

protection were at their best very weak if not non-existent. Respondents in both communities also indicated that poverty was an underlying cause of land cover change. Interviews revealed that impoverished illicit miners have constantly moved from one mining plot to another in search of diamonds and that they have increasingly mined new plots in remote locations. Respondents also mentioned increased demand for farming products at the national and sub-regional levels as a major underlying cause of land cover change. The demand for labor and the dreams of ‘striking it rich’ have led to an inflow of migrants to the diamondiferous areas of Kono District. Although population growth was cited as an ultimate factor it was of lower magnitude in non-mining chiefdoms. This was contrary to the pro- Malthusian discourse that presents population growth as the biggest problem in developing countries. Unlike those in mining communities, customary land tenure system was considered an underlying driver in non-mining chiefdoms. The belief that land belongs to the community and everyone has the right to utilize it has increasingly contributed to indiscriminate use of land especially in the remote areas.²¹⁴ As custodians of the land, chiefs demarcate land to residents; however, some accessed land without the knowledge and/or approval of chiefs. Other responses were increase demand for firewood, and charcoal production at district and national levels.

In general, diamond mining influences environmental degradation. An overwhelming number of respondents (92.1%) supported the assertion that diamond mining negatively affects the environment and cited various impacts (see table 6.2). The main ones included reduction in forest cover, soil fertility and productivity, water pollution, disruption of river drainage and stream flows, and damage to wetlands.

²¹⁴ Views of some local residents interviewed.

Table 6.2: Environmental impacts of diamond mining

Natural resource	Mining chiefdom		Non-mining chiefdom	
	Frequency	Percent	Frequency	Percent
Forest cover	27	12.2	76	63.3
Land	67	30.3	42	35.0
Wetlands	51	23.1	-	-
River/Streams	76	34.4	2	1.7
Total	221	100	120	100

*Environmental impacts based on multiple responses (n=221)

Figure 6.3 Most affected natural resource in mining and non-chiefdoms

Environmental Impacts	Frequency	Percent
Reduces land cover	120	54.3
Pollutes water	107	48.4
Reduces soil fertility and productivity	82	37.1
Reduces water availability	49	22.2
Disrupts river drainage and stream flows	39	17.6
Damage swamps	29	13.1
Creation of artificial lakes	13	5.9
Triggers flooding	3	0.7
Pollutes air	2	0.5

Natural resource depletion was also considered a major environmental problem in Kono District. Respondents in both communities noted that natural resources were mostly affected (Table 6.3). Those in mining chiefdoms indicated that over the years diamond mining had badly affected rivers/streams. The District Council Chairman noted that the removal of tree cover increased surface runoff while the groundwater table fell. He also said that the sinking of numerous boreholes in mining areas has affected water quantity. Unlike mining communities, water related problems were not considered the most affected natural resource in non-mining chiefdoms. As in non-mining chiefdoms, about a third of respondents in mining chiefdoms maintained that land was the most damaged

natural resource. Interview revealed that land degradation was widespread in the diamondiferous chiefdoms as land was not only cleared of vegetation but was excavated to remove the tailings. Some of them indicated that land was not only lost by excavation but the tailings were placed on adjacent land thus increasing the area degraded and reducing available land for agriculture and other uses.

Diamond mining has also damaged inland fertile wetlands. A number of respondents in mining communities maintained that diamond mining had damaged fertile wetlands. A number of key informants expressed similar views about damaged wetlands and their implications for rural livelihoods. Interviews revealed that several plots of swampland were withdrawn from farmers in the Tankoro chiefdom for the extraction of kimberlite diamonds. Most participants in a focus group mentioned that since the end of the war, their swamp rice activities had been substantially reduced due to the re-allocation of their land for mining purposes. Since alluvial mining is done primarily on river valleys and river flood plains, considerable diamond extraction has been extracted from wetlands. Mining activities have therefore damaged wetlands, thus substantially reducing the agricultural potential of the once fertile farmland.

Although forest cover loss was cited by both areas, a higher percentage of those in non-mining chiefdoms considered it the most affected natural resource in their community. Albeit the occurrence of deforestation in the terrace areas, considerable amount of forest has been cleared along riverbeds for mining.²¹⁵ Several interviewees maintained that mining companies were primarily responsible for forest depletion in mining communities as they have excavated hundreds of acres of land. A number of local

²¹⁵ Interview with a religious head

residents indicated that the mining activities of African Minerals (formerly SLDC) and Milestone Companies in Nimiyama Chiefdom and Tefeya in Sandor Chiefdom had resulted in massive deforestation (figures 6.4a and 6.4b). Based on local perceptions, it can be inferred that environmental degradation is more severe in mining chiefdoms.



Figure 6.4a Land excavated by the SLDC in Nimiyama Chiefdom



Figure 6.4b Corporate mining in Babakama, Nimiyama Chiefdom

6.2.2 Impacts of Mining on Agriculture, Forest and Local Livelihoods

Table 6.4 Most affected farming activity in mining chiefdom

Farming Activity	Frequency	Percentage
wetland rice farming	114	55.3
Upland rice farming	74	35.9
Cash crop farming	13	6.3
Vegetable gardening	5	2.4
Total	206	100

The growth of diamond mining has affected farming activities with local livelihoods implications.²¹⁶ An overwhelming majority of respondents (94.4%) pointed out that diamond extraction has resulted in farmland degradation. As shown in Table 6.4 more than half of them said wetland rice farming was the most affected while about a third pinpointed upland farming. Other responses were cash crop farming and vegetable gardening. A third of respondents pointed out that mining-induced activities have affected their livelihoods. They noted that they could not access wetlands as almost all of them had been turned into mining plots. According to some local residents, extensive mining had led to substantial reduction of available land for crop farming. A few of them indicated that they had to travel to other chiefdoms to undertake upland farming but noted that the output from upland was considerably lower than that of wetland. Such findings corroborated with those of Mani (2004) who noted that wetlands had been destroyed by mining activities and that such ecological transformation has had a negative impact on food security. Interviews also revealed that the growth of large-scale mining companies

²¹⁶ Prior to diamond mining, farming was the primary economic activity.

had result in vast areas of degraded land that encompassed terraces and wetlands. A key informant explained how an industrial mining company had flooded his farmland thus destroying his rice farm. Another informant said that the disruption of rivers/stream courses had considerably reduced water inflow into the very limited available wetland resulting in lower rice production. Thus diamond mining has had a negative impact on farming, an essential livelihood option for many local rural residents.

A related issue was whether or not mine-out areas were useful for farming activities. Most interviewees (62.8%) said areas mined were not useful for farming, but others (37.2%) affirmed that those areas were still useful for farming (valid n=234). A majority of those who said they were no longer useful (71.7%) pinpointed soil infertility due to the removal of surface soil while others (20.4%) maintained that the creation of mine out pits have made the areas unsuitable for farming. Other responses were desiccation of land and erosion due to deforestation. Based on people's perception, mine-out areas were generally areas of low agricultural productivity for land-based rural residents.

The relationship between forest access and local livelihoods was also an issue of concern. Access to an increasingly reducing forest cover has affected the livelihood of many local residents in the mining chiefdoms in the post-conflict era. Although many respondents (81.9%) were initially able to access forest products (firewood, timber and medicinal plants), about two-third of them indicated that there had been reduced access to these products over the past five years. In a similar vein, 61.5% of them said that supply of wood had dwindled over the same period. The primary reasons for reduced access to forest products were limited forest in their community and the difficulty of obtaining

permission (Table 6.5). As a result of declining forest, chiefs granted few people permission to access forest. Furthermore, families that owned portion of forest land did not allow non-family members to utilize their land. On the whole, declining forest has affected access to basic forest products that are essential for local rural livelihoods.

Table 6.5 Reasons for decrease in access to forest products

Reduced access reasons	Frequency	Percentage
Permission difficulty	19	14.8
Very little forest in community	86	67.2
Limited access routes	17	13.3
No forest in town/village	3	2.3
Fire destroy bush	1	0.8
Company has extensive land	2	1.6
Total	128	100

6.2.3 Perceived Trends in Agricultural Production and State of Forest

The total effects of mining have had a negative impact on agricultural production. According to respondents' perceptions, there had been a downward trend of agricultural productivity especially in the mining chiefdoms. As shown in figures 6.5a and 6.5b, respondents indicated that before 1991 agricultural productivity was high in both mining and non-mining areas, though it was higher in non-mining chiefdoms. During the civil war period (1991 to 2002) the level of agricultural productivity was mainly medium to low in both areas.²¹⁷

²¹⁷ During the civil war, there were intermittent stable periods during which some people did farming. Nevertheless, very few people were engaged in farming activities.

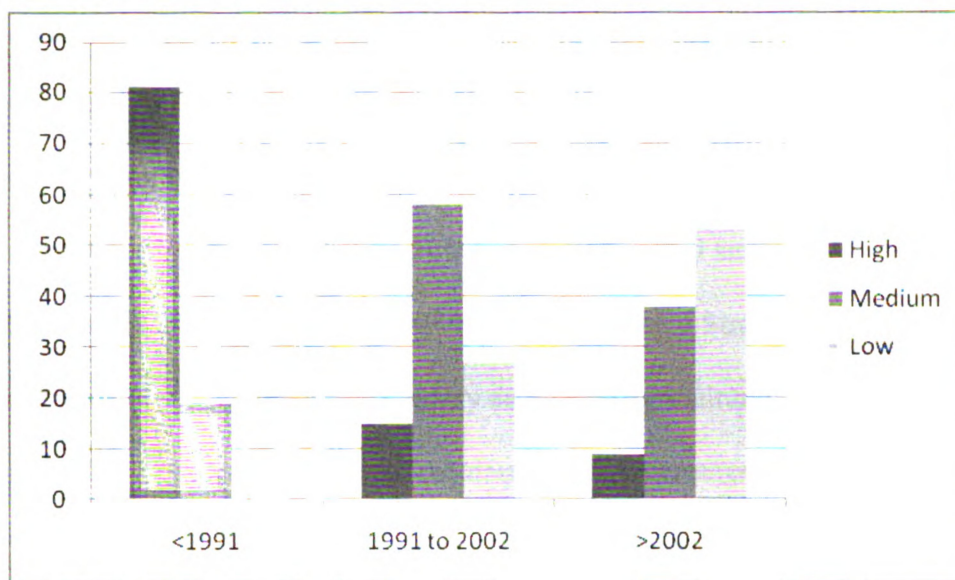


Figure 6.5a Perceived trends in agricultural productivity in mining chiefdoms

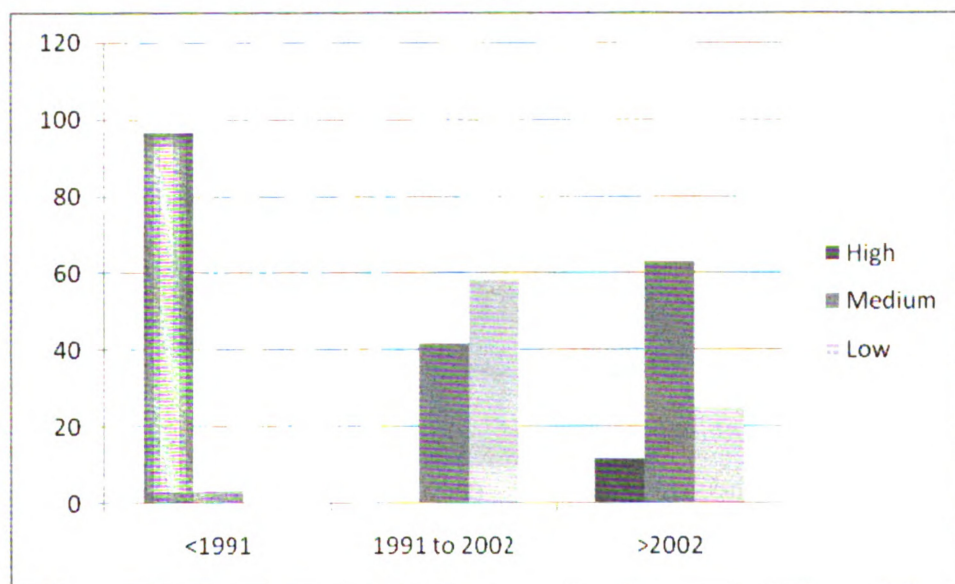


Figure 6.5b Perceived trends in agricultural productivity in non-mining chiefdoms

Since 2002 (post-conflict period), a higher percentage of respondents (52.7) in the mining chiefdoms pointed out that agricultural productivity was low than in the non-mining chiefdoms. Over 60 percent of respondents in non-mining chiefdoms ranked

agricultural productivity (since 2002) as medium while less than 40 percent of those in mining chiefdoms rated it medium. Local residents echoed that the major issue of concern to farming since 2002 was the substantial reduction in wetlands and terrace lands accelerated by the remarkable growth in industrial and small-scale mechanized mining in the district. In fact, the 2002-2003 National Recovery Strategy pinpointed Kono District as the most vulnerable in the country as regards agricultural production, which accounted for only 21 percent of its cereal requirements (Government of Sierra Leone, 2003 cited in World Bank, 2008). It was highly probable that mining areas were more vulnerable than agricultural chiefdoms. Thus, though environmental degradation has led to a downward trend in agricultural productivity, more respondents in mining chiefdoms perceived a continued decline after the civil war.

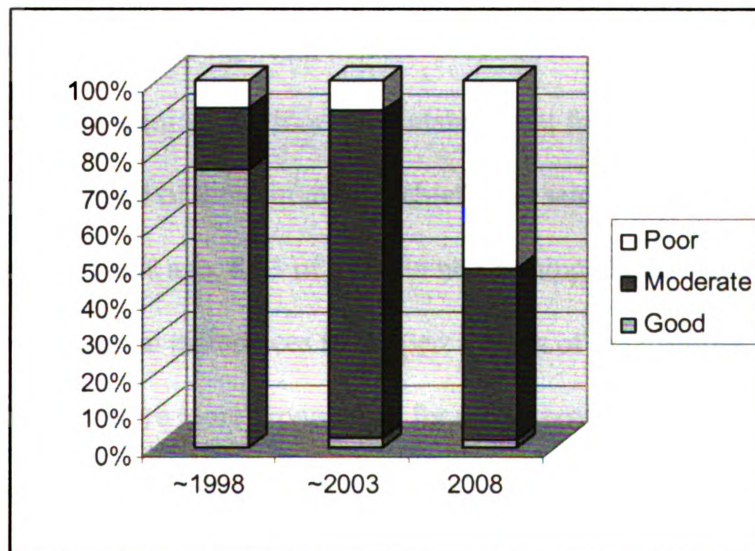


Figure 6.6a Perceived state of forest cover in mining chiefdoms

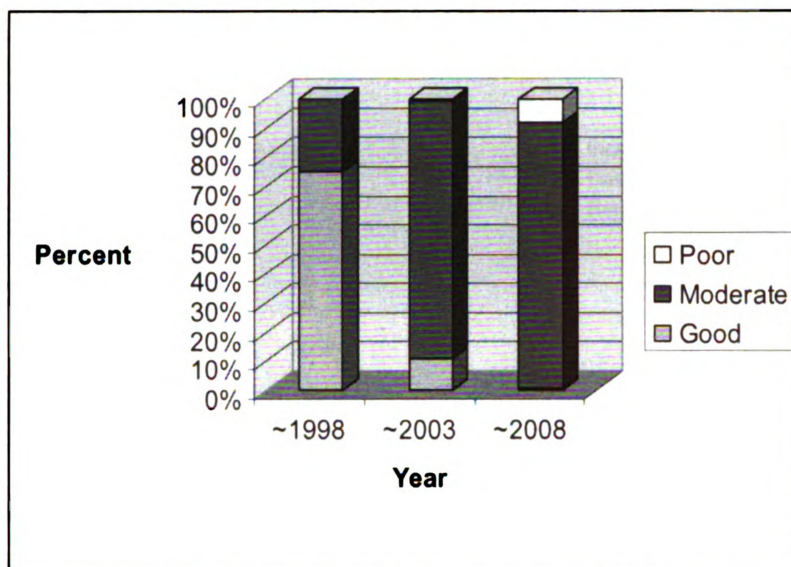


Figure 6.6b Perceived state of forest cover in non-mining chiefdoms

The state and trend of forest cover have also been transformed in both areas of the district. Yet, respondents attested to significant variations between the mining and non-mining chiefdoms (see figures 6.6a and 6.6b). Over 70 percent of respondents in the mining and non-mining chiefdoms maintained that forest cover was good ten years ago. While 89.2 percent of those in mining chiefdoms said that the state of forest was moderate five years ago, 88.3 of those in non-mining chiefdom rated it moderate. While there were marginal differences in the perceptions of the majority of respondents in the two areas, they were more pronounced for the current state of forest cover. Over half of respondents in the mining chiefdoms said that the current state of forest cover was poor, but only 8.3 percent of those in non-mining chiefdoms gave similar response. Nine-tenths of those in non-mining chiefdoms indicated that the state of forest was moderate compared to less than half of those in mining chiefdoms.

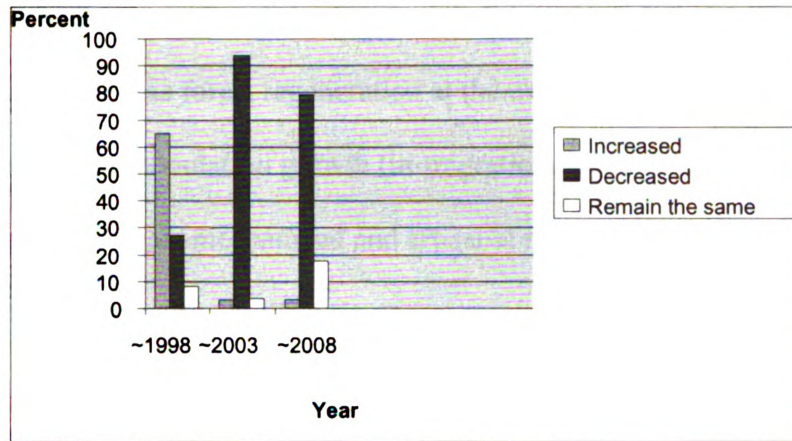


Figure 6.7a Perceived trend of forest cover in mining chiefdoms

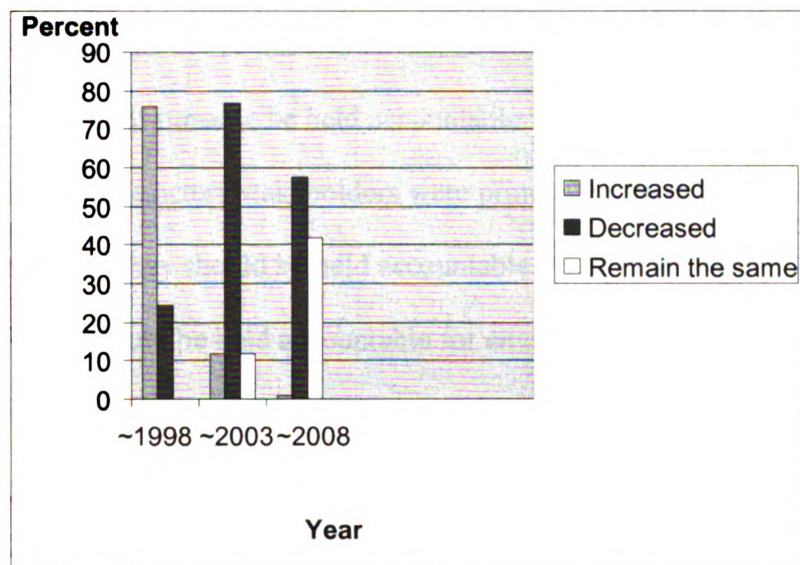


Figure 6.7b Perceived trend of forest cover in non-mining chiefdoms

Similarly, respondents' perceptions of the trend in forest cover were sought (see figures 6.7a and 6.7b). About two-third of respondents in the diamond mining chiefdoms stated that forest increased until about ten years ago (~1998), but witnessed a declining trend about five years ago (93.5% of respondents) and as of 2008 (79.1%). The initial increase in forest was primarily due to forest re-growth during the decade long civil war as most people had move to safe places. There were virtually no land-based activities

especially in the agricultural chiefdoms. It is ironic that while war has negative outcomes, one positive one was forest regeneration at the expense of population displacement. As discussed earlier, population growth (in-migration in particular), the dramatic increase in industrial, small scale mechanized and artisanal mining activities were amongst drivers of decreasing forest cover. In the case of non-mining communities, three-fourth of them indicated that forest increased until ten years ago. Since then there had been a downward trend in forest cover as indicated by majority of them (see figure 6.7b).

6.2.4 Actors responsible for Environmental Degradation

The analysis above has shown that environmental degradation had occurred in the district but should someone be held accountable for such outcome? It was widely believed that some actors/stakeholders were primarily responsible for environmental degradation and they should be held accountable. Many respondents (88.7%) maintained that someone should be held accountable for environmental problems in diamondiferous communities.²¹⁸ Most pointed out that activities of specific individuals or groups have led to considerable environmental degradation. In mining areas, diamond companies, chiefs and artisanal miners were the biggest perceived culprits followed by local actors whereas in non-mining areas, local actors and the Ministry of Mineral Resources were regarded as the major malefactors (Table 6.6).

²¹⁸ Others (11.3%) said that nobody should be blamed for environmental degradation in Kono District.

Table 6.6 Local perceptions of perpetrators of environmental degradation

Perpetrators	Mining chiefdoms		Non-mining chiefdoms	
	Frequency	Percent	Frequency	Percent
Diamond companies	55	26.1	6	8.3
Chiefs	52	24.7	18	25
Ministry of Mineral Resources	15	7.1	13	18.1
Artisanal miners	41	19.4	-	-
Illicit diamond miners	14	6.6	4	5.6
Local people	24	11.4	28	38.8
Foreigners	10	4.7	3	4.2
Total	211	100	72	100

There was widespread belief that diamond mining companies were primarily responsible for environmental degradation. A senior NMJD official noted that mining companies should be held accountable for environmental degradation as they had mined extensive areas and had dug out more than 30 meters of top soil. He pointed out that extensive areas in Nimiyama Chiefdom had been devastated by the African Minerals Company and that the company had diverted the course of the Bafin River which had occasionally resulted in flooding of the main road (Figure 6.8). He claimed that the company had flouted the environmental protection clauses of the mining law. Diggers and miners' focus groups also expressed concern about the magnitude of environmental damage by industrial mining companies in Tankoro, Sandor, and Nimiyama Chiefdoms since the resumption of mining in 2003.



Figure 6.8 Part of the Bafin River whose course has been diverted

Artisanal miners and chiefs were also blamed for environmental degradation in mining chiefdoms. In all, 26 percent of interviews opined that environmental degradation was largely due to artisanal miners (both legal and illicit). Interviews disclosed that chiefs should be held accountable for the devastation of mining areas as they grant permission for artisanal mining. An elderly man insisted that most chiefs were primarily concerned about financial benefits (including surface rent and DACDF) obtained from artisanal mining, therefore they granted permission without thinking about the environmental repercussion.

Local residents also believed that the MMR in particular and the GOSL in general should be held accountable for environmental degradation in the district. A traditional leader blamed the central government as they had failed to enforce environmental regulations related to mining. Interviews revealed that that the MMR in collaboration with the GOSL were mainly attracted to the economic rewards of mining and did not give

premium to environmental protection even though it was highlighted in mining legislations.

Environmental degradation in Kono District is attributed to an ineffective structural system upon which other social actors capitalize on. Since local and national authorities prioritized mineral revenue from the issuance of mining licenses/leases, they have not given serious consideration to environmental issues. Corrupt practices of authorities have also undermined enforcement of sustainable mining practices. Other actors like local people and mining companies therefore engage in environmentally inauspicious mining practices. The weak monitoring and enforcement of environmental policies have given agency to local people to engage in land based activities (farming, lumbering and charcoal production) at an environmentally unsustainable rate. Concerted effort should therefore be made to engage in more environmentally friendly mining and farming practices.

In sum, this section has shown that even though the local environment has been degraded in both areas, the damage was more pronounced in the mining chiefdoms. While both mining and non-mining areas have witnessed considerable forest cover depletion, several components of the environment have been degraded in mining chiefdoms. Of particular concern were water-related problems and extensive wetlands and terrace land degradation. Alluvial diamond mining has transformed several tracts of formerly arable land to virtual wasteland. In fact, waterways essential for irrigation of rice wetlands have been diverted and/or destroyed. Thus many local residents who have been economically deprived by artisanal and small-scale mining have also been made poorer by the constricting of their land-based alternative livelihood option. The expansion

of industrial and small-scale mining would accentuate the situation for many local residents whose livelihoods are primarily and/or secondarily dependent on farming and/or forestry products. For many local people diamond exploitation is a double-edged sword that has resulted in a downward spiral of poverty.

6.3 Land Use/Land Cover Change Analysis

6.3.1 Land Covers Quantification and Change Detection

Once heavily covered by forest and napier grass, Kono District witnessed considerable land use/land cover change (LULCC) during the period 1986 to 2007. Remote sensing analysis reveals that as of 1986, 61.2 percent of the district was covered with forest, followed by grass (21.2%), agriculture (8.9%), and bare ground (7.2%) [Table 6.7a]. By 1991 forest cover and grass cover had declined while agriculture, urban/settlement, water and bare ground areas had increased. Forest cover, napier grass, agriculture, and bare ground were the dominant land use/land cover classes (Table 6.7b). By 2002 there had been remarkable changes in land use/land cover. Although forest cover increased by 3.9 percent, area covered by grass fell by 30 percent compared to what they were in 1991. The most profound change was bare ground which increased by almost 100 percent. There was significant reduction of farming and urban/settlement areas while the spatial extent of water increased moderately (Table 6.7c).

As of 2007 land use/land cover had changed significantly compared to what they were in 2002. While forest cover depletion was about 16 percent; area under agriculture witnessed a phenomenal increase of about 450 percent. Both bare ground and grassland areas declined, the former witnessed a 21 percent reduction while the latter decreased by

about 60 percent of what they were in 2002. Urban areas witnessed more than three-fold increase while that of water slightly reduced (Table 6.7d).

Table 6.7a Land use/land cover 1986

Land use	Acre	Percentage
Grass	287101.7	21.2
Agriculture	120936.2	8.9
Forest	825715.7	61.2
Water	2079.616	0.2
Urban	18092.62	1.3
Bare	97847.23	7.2
Total	1351773	100

Table 6.7b Land use/land cover 1991

Land use	Acre	Percentage
Grass	243115.3	17.9
Agriculture	190920.2	14.1
Forest	771539.5	57
Water	2807.46	0.3
Urban	21731.84	1.7
Bare	121658.7	9
Total	1351773	100

Table 6.7c Land use/land cover 2002

Land use	Acre	Percentage
Grass	175736.3	13
Agriculture	90570.56	6.7
Forest	823436.7	60.9
Water	4263.147	0.3
Urban	15076.89	1.2
Bare	242689.4	17.9
Total	1351773	100

Table 6.7d: Land use/land cover 2007

Land use	Acre	Percentage
Grass	69773.1	5.2
Agriculture	428110.6	31.6
Forest	605897.6	44.8
Water	2807.4	0.2
Urban	54589.6	4
Bare	190594.7	14.2
Total	1351773	100

Land use/land cover change detection demonstrated significant differences in the spatial extent of land cover from one time period to another and also the entire study period (Table 6.8a). Figures 6.9a through 6.9d show the different land use/land cover classes for the various time segments examined. Grass land experienced a continuous reduction in size between 1986 and 2007. The reduction in grass cover was highest after the civil war period – 2002 to 2007 (-60.2%). Agricultural land cover increased between 1986 and 1991, experienced a dramatic reduction between 1991 and 2002 (-52.5%), and an exponential increase after 2002 (Table 6.8b).

Table 6.8a Land use/land cover by acreage 1986 to 2007

Land use	1986 (Acre)	1991 (Acre)	2002 (Acre)	2007 (Acre)
Grass	287,101.7	243,115.3	175,736.3	69,773.1
Agriculture	120,936.2	190,920.2	90,570.5	428,110.6
Forest	825,715.7	771,539.5	823,436.7	605,897.6
Water	2,079.6	2,807.4	4,263.1	2,807.4
Urban	18,092.6	21,731.8	15,076.9	54,589.6
Bare ground	97,847.2	121,658.7	242,689.4	190,594.7
Total	1,351,773	1,351,773	1,351,773	1,351,773

Table 6.8b Land use/land cover change by percent 1986-2007

Land use	1986-1991	1991-2002	2002-2007
Grass	-15.3	-27.7	-60.2
Agriculture	+57.8	-52.5	+372.6
Forest	-6.5	+6.7	-26.4
Water	+34.9	+51.8	-34.1
Urban	+20.1	-30.6	+262
Bare ground	+24.3	+99.4	-21.4

Table 6.9 Land use/land cover change 1986 to 2007

Land use	LULLC '000 acres	% change
Grass	-217.329	-75.70
Agriculture	307.174	+254.00
Forest	-219.818	-26.62
Water	0.727	+35.00
Urban	36.497	+201.72
Bare ground	92.747	+94.70

During the period of study, the patterns of change trajectories for some LULC classes reflected varying socioeconomic, political, and environmental processes. Remote sensing analysis showed that forest cover increased by 2002. Increase in forest cover between 1991 and 2002 resulted from a sharp drop in the district's population resulting from displacement. Over the 11 year period, some agricultural lands, settlements, and bare ground partly transformed to various levels of succession forest. Significant forest cover loss occurred after 2002 due to growth in industrial mining, increase in the demand for fuel wood and new agricultural lands following the return of the district's pre-war population. According to UNAMSIL and UNOCHA (2003), the entire displaced population of the district had returned by 2003.

Change trajectory of agricultural land class was also significant during the period of study. The decline in agricultural land as of 2002 was attributed to a cessation of most agricultural activities due to massive displacement of the district's population. A number of factors accounted for the sharp increase in agricultural land since 2002. Firstly, a large fraction of the district's displaced population returned to the agricultural chiefdoms following the end of war. Secondly, interviews with respondents in Kono demonstrated that people were moving away from the mining areas to non-mining areas where they could practice agriculture. They also noted that it was difficult to make a living within the mining chiefdoms. They have seen this as a more stable way of earning income compared to diamond mining. Moreover, increase in population within Kono district between 1985 and 2004 occurred mostly in the agricultural chiefdoms (Thomas et al. 2006).

Perhaps the most striking land cover change was the doubling of water bodies between 1986 and 2002. Remote sensing analysis depicted a significant increase in the spatial extent of water bodies. This was a unique finding that clearly showed the links between extensive diamond mining within a weak regulatory system and the creation of water bodies. The main reason for expansion in water bodies was the creation of artificial lakes due to extraction of diamonds. This worsened between 1991 and 2002 as a result of extensive unregulated extraction of 'conflict diamonds which tremendously increased the number of mining pits.²¹⁹ These were subsequently filled during the rains creating artificial lakes and ponds. Two former Revolutionary United Front (RUF) abductees revealed that various war factions (including the RUF, government troops,

²¹⁹ The United Nations (UN) defines conflict diamonds as "...diamonds that originate from areas controlled by forces or factions opposed to legitimate and internationally recognized governments, and are used to fund military action in opposition to those governments, or in contravention of the decisions of the Security Council" (UN, 2000).

ECOWAS peace keepers) ordered them to mine diamonds in Tankoro, Gbense, Nimikoro, and Nimiyama Chiefdoms (central and western Kono) during the civil war. They noted extensive and rigorous mining took place as even roads and burnt houses were dug for diamonds.²²⁰ The expansion of water bodies was a significant finding with local livelihood and health implications. Such transformation not only reduced areas for agrarian activities but the open pits “are perfect breeding grounds for mosquitoes, spreading diseases like malaria and bilharzias” (World Bank, 2008:17). Post-conflict period has witnessed a reduction in water bodies due to a decline in unregulated mining activities and reclamation of some mine-out areas. NGOs like the Foundation for Environmental Sustainability and Security (FEES) and One-Sky have reclaimed and rehabilitated some mine-out areas. Furthermore, a number of local residents, especially in Nimikoro and Tankoro Chiefdom, have been engaged in some land reclamation activities.

Other significant land cover/use changes included urban land-class decline between 1991 and 2002. The diminution of urban land class between 1991 and 2002 was attributed to massive destruction of towns and villages during the war.²²¹ Bare ground increased between 1986 and 2002 with most of the increase occurring between 1991 and 2002. Most of the increase occurred in the diamondiferous chiefdoms where the activities of war protagonists and abductees were mainly centered. The latter suggest that lands were cleared for mining activities. Former Revolutionary United Front (RUF) abductees

²²⁰ Interviews held in Kono District in 2008.

²²¹ A number of local residents maintained that most towns and villages were burnt down during the decade- long pernicious episode.

revealed that indiscriminate clearance of land for rampant illicit mining was evident in the central and western diamondiferous chiefdoms of Kono District.²²²

On the whole there were significant changes in LULC for the period of study. While forest cover and grass witnessed significant decline, there were increases in the spatial extent of the other land uses/land cover. The most significant increase in acreage was in agriculture (Table 6.9).

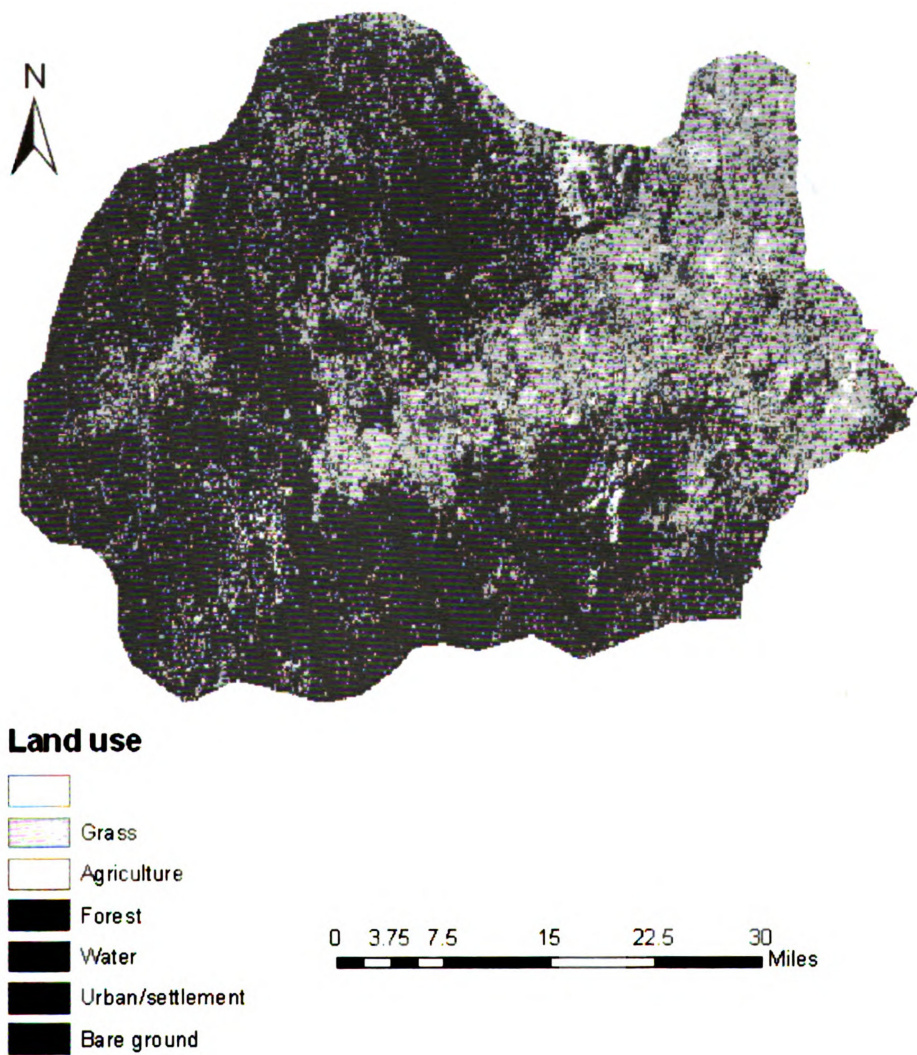


Figure 6.9a Land use/land cover classified map for Kono District, 1986

²²² Interviews with diamond miners in Kono District who were abductees during the civil strife.

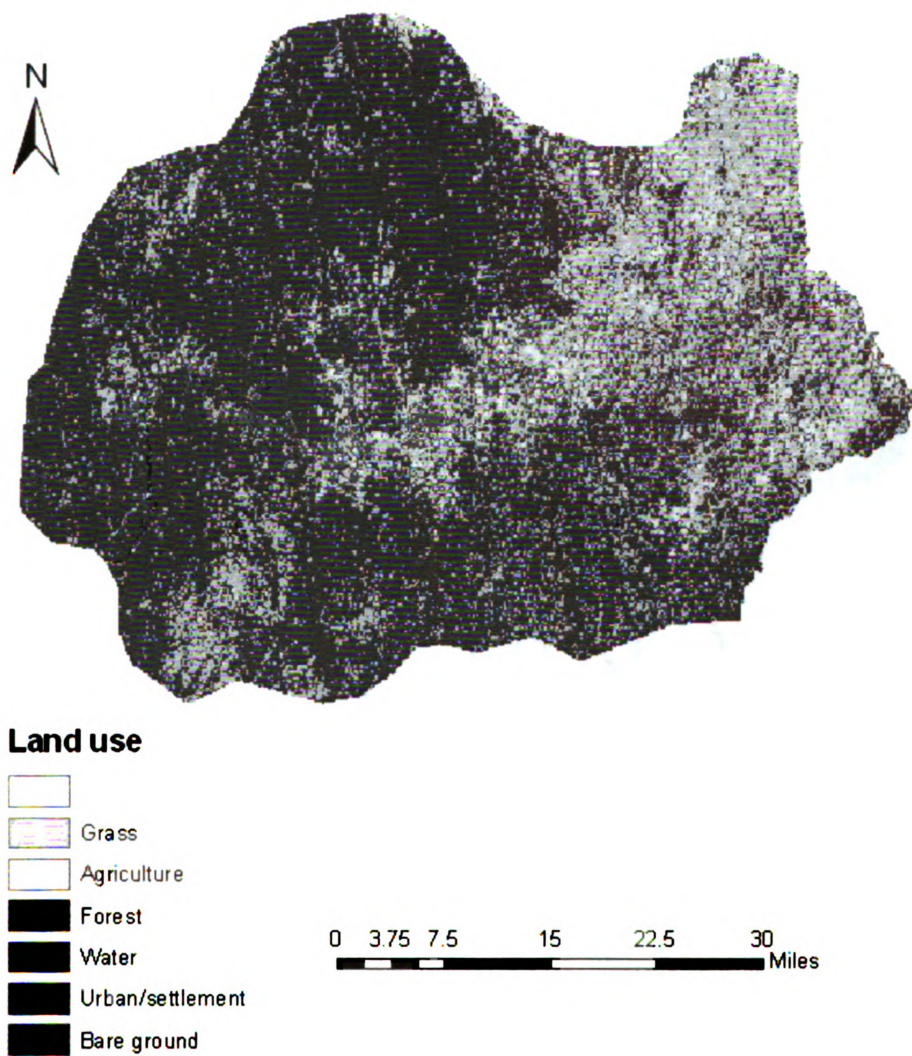


Figure 6.9b Land use/land cover classified map for Kono District, 1991

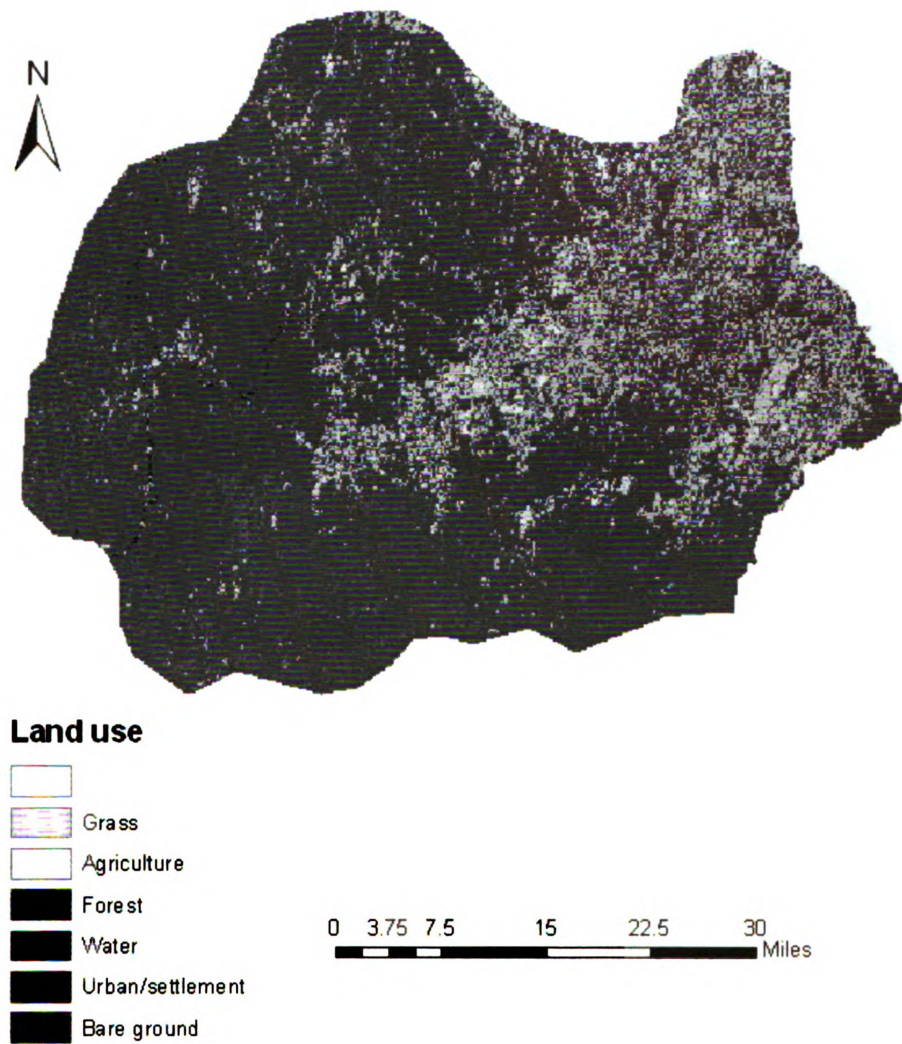


Figure 6.9c Land use/land cover classified map for Kono District, 2002

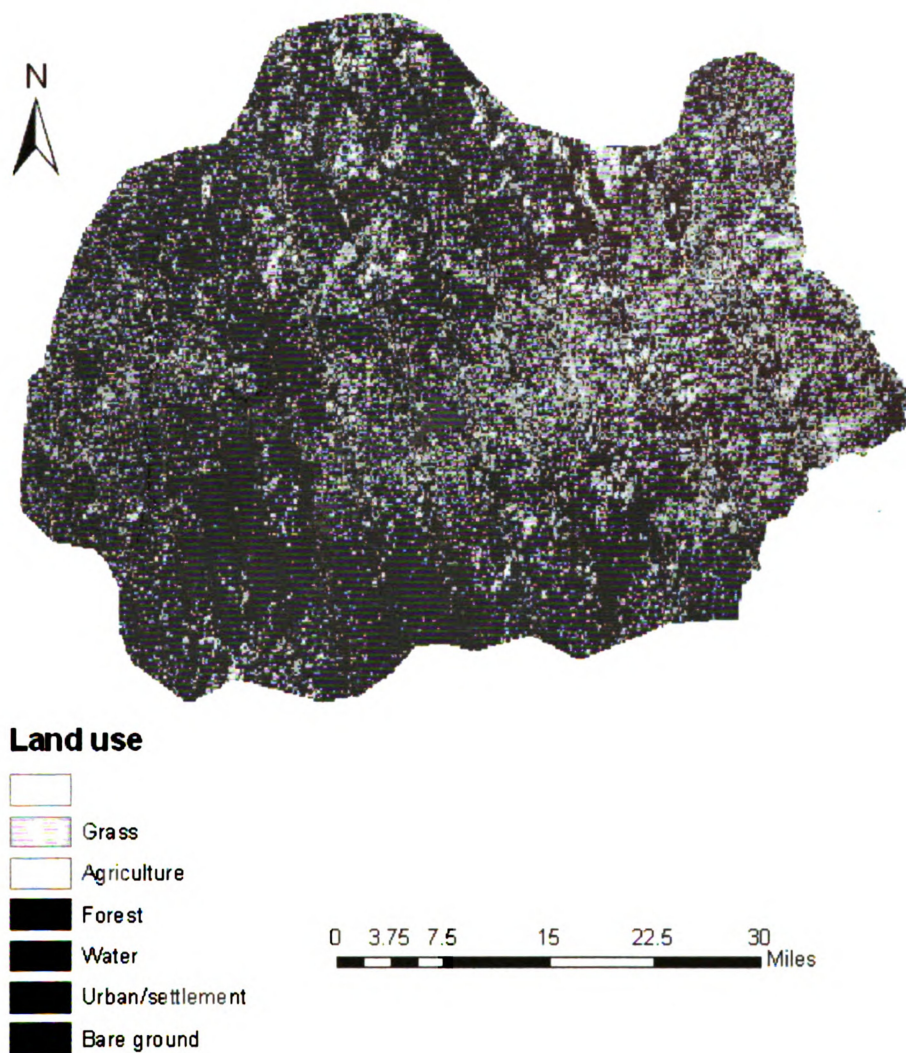


Figure 6.9d Land use/land cover classified map for Kono District, 2007

LULC change analysis has revealed that civil strife can accelerate or decelerate the extent of land cover change which is different from the trajectory of change during peace periods. As shown in tables 6.8a and 6.8b, four land cover change types are significant. First, while there was reduction of forest during the peace periods (1986 to 1991 and 2002 to 2007), there was natural forest growth during the civil war period. Increase in forest cover between 1991 and 2002 resulted from a sharp out-migration of

the district's population. It is estimated that 72.1 percent of the district's pre-war population was displaced during the war (UNAMSIL and UNOCHA 2003). Over the 11-year period, some agricultural lands, settlements, and bare ground partly transformed to various levels of succession forest. The general perception of most respondents that forest increased about ten years ago (~1998) corroborated satellite image interpretation for the civil war period (1991 to 2002). Furthermore, satellite image analysis revealed that forest growth was primarily in the non-mining chiefdoms. This result properly fits within the sociopolitical theoretical framework of warfare wherein combatants are more interested in natural resources with high/instant value such as diamonds that could facilitate their political and economic agendas (Goldstone 1996; Le Billon 2001). Second, there was a phenomenal increase in areas covered by water in the diamondiferous chiefdoms during the war period compared to the peace periods. As earlier mentioned, a number of respondents expressed concern over the creation of artificial lakes as a result of mining activities. Former Revolutionary United Front (RUF) abductees maintained that indiscriminate clearance of land for mining purposes and rampant illicit mining occurred in the central and western diamondiferous chiefdoms during the war.²²³ Third, there was a sharp reduction in land under agriculture during the civil war era unlike pre-war and post-war periods that witnessed growth in agricultural land. The abandonment of farming and subsequent forced migration of over 70 percent of district's population contributed to reduced farming areas. Fourth, there was a sizeable reduction of urban/settlement areas uncharacteristic of peace periods. Several houses were burnt down during the civil war and abandoned thatch houses were destroyed thus reducing the spatial extent of urban/settlement.

²²³ Interviews with a former captive of RUF, Spring 2008.

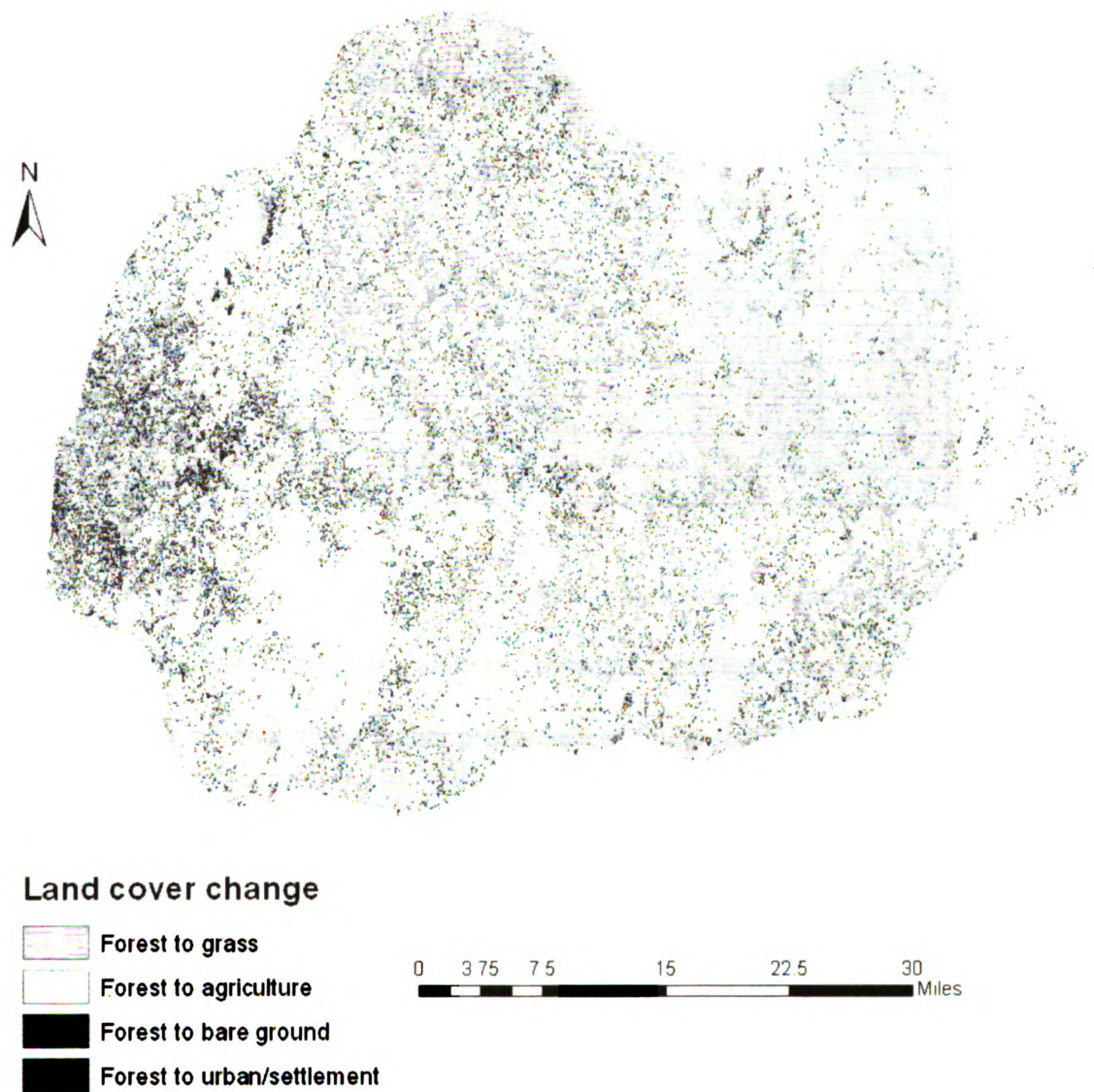


Figure 6.10 Forest cover change detection map, 1986-2007

As shown in figure 6.10, Kono district witnessed significant forest cover change during the 21 period of study. The most notable changes were forest to grass and agriculture. This was followed by forest cover change to bare ground and forest to

urban/settlement. Remote sensing analysis did not detect a change from forest to water bodies.

6.3.2 Spatial Extent of Forest Cover in Mining and Non-Mining Chiefdoms

Table 6.10 Comparison of forest cover to other land uses

Year	Land use	Mining chiefdoms(acres)	Percent	Non-mining chiefdoms(acres)	Percent
1986	Forest	520,694.2	74.1	298,007.4	45.9
	Non-forest	154,057.7	25.9	379,013.8	54.1
1991	Forest	505,174.9	71.8	239,920.8	39.9
	Non-forest	170,476.4	28.2	436,201.1	60.1
2002	Forest	475,590.4	62.3	428,573.8	59.3
	Non-forest	200,081.1	37.7	247,527.7	40.7
2007	Forest	319,648.7	56.5	346,286.1	31.2
	Non-forest	355,264.0	43.5	330,573.9	68.8

A comparative analysis of land cover change in the mining and non-mining chiefdoms (based on remote sensing analysis) revealed significant variations between the two areas. In general there was a higher prevalence of forest cover in the mining chiefdoms compared to the non-mining, predominantly farming areas over the study period. However, the trajectory of forest cover change varied over time. Although the period 1986 to 1991 witnessed a reduction in forest cover in both areas, it was greater in the agricultural chiefdoms. The need for land for the expansion of agriculture and high demand for fuel wood were the primary reasons for a higher forest loss. The trajectory of change was different during the civil war period (1991 to 2002) in which forest cover reduction occurred in the diamond mining chiefdoms but there was remarkable forest cover re-growth in the non-mining chiefdoms due to abandonment of farming areas during the war (Table 6.10). Forest cover loss occurred in both areas during the post-civil war period (2002 to 2007) but it was more dramatic in non-mining (predominantly

farming) chiefdoms and less so in the diamondiferous chiefdoms. The primary reasons for this distinction were a higher population growth in the agricultural areas and the expansion of farming, lumbering firewood cutting and charcoal production.

There were variations between the trajectory of forest cover change from satellite interpretation and local perception of forest. Results obtained from satellite image analysis were about 85% accurate, thus there was a window of uncertainty. While satellite images revealed that there was more forest cover in mining areas, local residents in mining communities underlined substantial forest decline. It should be noted that local residents perceived primary forest as forest but did not consider secondary forest, or trees/shrubs mix as forest. As far as they were concerned there was no real forest as forest depletion had occurred for over fifty years. In a similar vein, most of those in non-mining chiefdoms maintained that there was considerable forest in their communities. A number of key informants insisted that there was more forest in the non-mining chiefdoms compared to the mining chiefdoms. Personal observation revealed that forest cover in the mining areas were mainly shrubs while that of the non-mining areas (though less) had better quality trees due to adherence to local bye laws. The forest-cover class detected from satellite image analysis comprised all categories of trees ranging from primary forest to shrubs.²²⁴ Though there are variations between local perceptions of what constitutes forest and remote sensing analysis, one can say that based on all categories and sizes of trees the spatial extent of forest-like cover was greater in mining than non-mining chiefdoms.

²²⁴ In this study there was only one forest classification.

Table 6.11a Land cover change by type of chiefdom 1986

Land use	Mining chiefdoms (acres)	Percent	Non-mining chiefdoms (acres)	Percent
Grass	96803.2	13.3	190298.5	30.5
Agriculture	21107.5	2.9	99828.7	16.0
Forest	539332.1	74.1	286383.6	45.9
Water	1455.7	0.2	623.9	0.1
Urban	13101.1	1.8	4991.4	0.8
Bare ground	56044.0	7.7	41803.3	6.7
Total	727843.6	100	623929.4	100

Table 6.11b land use/land cover change by type of chiefdom 1991

Land use	Mining chiefdoms (acres)	Percent	Non-mining chiefdoms (acres)	Percent
Grass	90252.6	12.4	152862.7	24.5
Agriculture	21835.3	3.0	169084.9	27.1
Forest	522591.7	71.8	248947.8	39.9
Water	2183.5	0.3	623.9	0.1
Urban	16740.4	2.3	4991.4	0.8
Bare ground	74240.1	10.2	47418.6	7.6
Total	727843.6	100	623929.4	100

While the comparison of forest/non-forest in the mining and non-mining chiefdoms provided some useful insights about land cover change trajectories in the pre-war, civil war and post-war periods, a detailed examination of land use/land cover change presents a robust understanding of change dynamics in the two areas. As indicated in table 6.11a, as of 1986 there was a greater percent of forest cover in the diamond areas compared to the non-diamond areas. Bare ground, water bodies and urban areas were of higher spatial extent in the mining than in the non-mining chiefdoms. Nonetheless, diamond mining areas had less grassland and agricultural land. This was

mainly due to extensive mining activities and settlement development as a result of population concentration. By 1991 forest cover was comparatively greater in the diamond areas than the non-diamondiferous areas even though both areas witnessed forest decline (Table 6.11b).

Significant land use/land cover transformation had occurred by the end of the civil war in 2002. The most noticeable one was a moderate reduction in the percent forest cover in diamondiferous chiefdoms in contrast to substantial forest re-growth in the non-mining chiefdoms. There was virtually no economic activity in the non-mining chiefdoms during the civil war period as people had relocated to other places. The differences between bare ground coverage in the mining versus the non-mining areas increased sharply between 1991 and 2002. While bare ground more than doubled in the diamond chiefdoms, it increased marginally in the non-mining chiefdoms. This was because bare ground is associated with removal of vegetation and digging during mining. There was also a sharp difference between percent of areas covered by water in the mining and non-mining areas (Table 6.11c). Between 1991 and 2002 the quantity of water in the mining chiefdoms had increased by 150 percent while that for non-mining chiefdoms remained virtually the same. The expansion of bare ground and areas under water in mining chiefdoms could be attributed to the illicit mining activities of various war factions. While the proportion of agricultural land was higher in the non-mining chiefdoms compared to the mining chiefdoms, the difference in 2002 was substantially smaller than in 1991. In short, agricultural land was about a third of what it was in 1991. By 2007, forest cover, bare ground, urban, and water were of greater spatial extent in the mining

chiefdoms compared to the non-mining chiefdom while agriculture and grassland cover were greater in the non-mining chiefdoms (Table 6.11d).

Table 6.11c Land use/land cover by type of chiefdom 2002

Land use	Mining chiefdoms (acres)	Percent	Non-mining chiefdoms (acres)	Percent
Grass	37847.87	5.2	137888.4	22.1
Agriculture	31297.27	4.3	59273.29	9.5
Forest	453446.6	62.3	369990.1	59.3
Water	3639.218	0.5	623.9294	0.1
Urban	13829.03	1.9	1247.859	0.2
Bare ground	187783.6	25.8	54905.79	8.8
Total	727843.6	100	623929.4	100

Table 6.11d Land use/land cover change by type of chiefdom 2007

Land use	Mining chiefdoms (acres)	Percent	Non-mining chiefdoms (acres)	Percent
Grass	29841.59	4.1	39931.48	6.4
Agriculture	88069.08	12.1	340041.5	54.5
Forest	411231.6	56.5	194666	31.2
Water	2183.531	0.3	623.9294	0.1
Urban	41487.09	5.7	13102.52	2.1
Bare ground	155030.7	21.3	35563.98	5.7
Total	727843.6	100	623929.4	100

In sum, the analyses of social surveys and satellite images have shown that Kono District witnessed LULC change over the period 1986 to 2007. Forest cover change detection analysis shows that most of the forest cover loss was due to forest conversion to grassland, this was followed by the transformation of forest to agriculture, to bare ground and to urban/ built-up areas. In the pre-war period (1986 to 1991), there was increase in agricultural land, water, bare ground and urban land principally by mining and farming activities in conjunction to population growth. Forest cover was greater in the mining

than the non-mining chiefdoms but percent of grassland was lower in diamond chiefdoms. The civil war period (1991 to 2002) was mostly atypical to change that occurred during peace periods. Forced migration and the virtual economic standstill in most areas except for conflict diamond mining strongly influenced change trajectories during this period. Four significant changes occurred during that period. First, was forest re-growth especially in the non-mining chiefdoms. Second, was a remarkable decline in percent agricultural land which was more significant in the non-mining chiefdoms. Third, was a substantial percent increase of water in the mining chiefdoms while that of the non-mining chiefdoms remained the same.²²⁵ Fourth, was a considerable decline in urban/settlement area. Forest cover increased while agriculture decreased during the war because most people had escaped the fighting and moved to other places outside the district. The analysis has also shown significant increase in percent agriculture and urban/settlement in the post-civil war period. Further, grassland and forest cover have diminished in both areas though they are more pronounced in the non-mining chiefdoms. The expansion of farming and population growth in non-mining chiefdoms and increasing demand for farming and forest products have contributed to a reduction of forest and grassland in post civil war Kono. On the whole, there was considerable land cover transformation in both areas as forest cover and grass depleted significantly especially in the post-conflict period. Such profound LULC change within a 21 year period of time could have far reaching ecological and local livelihood implications. With increasing restricted access to land for small scale mining in favor of industrial mining, farmers and non-farmers would depend on agriculture and forest products for rural

²²⁵ The spatial extent of water could be greater than what was calculated as smaller mining pits were not captured by a moderate resolution LANSAT images.

sustenance. The analysis has shown that unlike agricultural chiefdoms, mining communities are in double local livelihood jeopardy as farmland for the most part was not available, and there was restricted access to the very little quality forest. Continued forest cover loss would also affect surface and subsurface water that is already reducing in diamond mining chiefdoms.

The analysis above has demonstrated that the environmental dimensions of the resource curse were more evident in the diamondiferous chiefdoms of the district. The environmental impacts of diamond mining have wider implications as the forest, land, and water have been adversely affected. While forest cover loss was greater in the non-mining areas due primarily to agricultural activities, the transformation of fertile lands (wetlands and terrace areas) to mining land had negative consequences on the agricultural productivity of local residents. Earlier works have also underscored the negative impact of mining on agricultural productivity (Gbekie, 2003; Momoh, 2002). The combined effect of loss of fertile agricultural land and poor quality forest had adversely affected the economic condition of many local residents in mining chiefdoms who rely on alternate local livelihoods to supplement their increasingly low returns from artisanal mining.

6.3.3 Environmental Mitigation Measures

Profound changes in land use/land cover especially in post civil war Sierra Leone have resulted in a number of environmental problems which should be addressed in order to lessen their ecological and economic impacts on mining communities in particular. Respondents suggested a number of measures that could improve the state of the environment in the district (see table 6.12).

Table 6.12 Suggested measures to improve environmental conditions in Kono District

Improvement measures	Mining chiefdoms		Non-mining chiefdoms	
	Frequency	Percent	Frequency	Percent
Reclaim mine-out areas	127	53.6	2	1.7
Enforce mining/environmental regulations	71	30.0	52	43.3
Intensive farming practices	5	2.1	53	44.2
Tree planting	15	6.3	13	10.8
Control illegal mining	19	8.0	-	-
Total	237	100	120	100

Enforcement of environmental regulations is a major environmental mitigation measure. Although respondents in both communities underscored enforcement of environmental regulations, a higher percent of those in non-mining communities suggested such a measure (Table 6.12). Others pointed out that the laws that require that industrial diamond mining companies reclaim and rehabilitate land should be enforced by the government. In general land reclamation and rehabilitation are environmental mitigation measures. A town chief said that in the past, forest guards were effective as they arrested those who burned charcoal. He suggested that forestry guards should be re-empowered to enforce mining with tree planting and that defaulters should face the due consequences of the law. According to him, the restoration of forest guards would minimize deforestation, an environmental concern in the district.²²⁶ Other interviewees maintained that rigid control of illegal artisanal mining would mitigate the environmental problems in Kono District. While these suggestions are plausible, enforcement of

²²⁶ Interview with the town chief of Yengema Town, Nimikoro Chiefdom, June 2008.

environmental regulations would require considerable capacity building for mines and environmental enforcement officials.

Another environmental mitigation measure is land reclamation in mining chiefdoms. This was emphasized by respondents in the mining chiefdoms. Focus groups expressed similar views. The general consensus amongst them was that mine out land should be drained, reclaimed and rehabilitated. They suggested that the central government should allocate funds for land rehabilitation to the newly established district and town councils, and that these councils and traditional leaders could utilize the services of youth associations for reclamation projects. In other words, land management responsibilities should be rescaled to the local level. While this is a good suggestion implementation is an uphill task as the cost of reclamation and rehabilitation of mine-out area far outweighs the limited amount paid as rehabilitation fees. Senior mines officials underlined the high cost of land rehabilitation. Interviewees suggested that land reclamation and rehabilitation should be mandatory for all those engaged in the various forms of mining and that strong punitive measures should be put in place for defaulters. Some key informants suggested that rather than paying rehabilitation fees, the legal requirement for artisanal and small scale mining should be modified such that miners must rehabilitate mine-out areas. Strengthening state capacity would be the prerequisite for effective rehabilitation.

Another environmental mitigation measures suggested was intensive farming practices. Interviews pointed to intensive farming practices as a mechanism that would minimize extensive land cover clearance for farming thus mitigating environmental problems.

Surprisingly, very few survey respondents (in the mining and non-mining chiefdoms) emphasized tree planting as a measure to improve the environment. Yet, as discussed previously, deforestation was considered a major environmental problem in the district. Nevertheless most key informants indicating that tree planting should be carried out by the forest division of government, chiefdoms, and mining companies. They also noted that national laws and chiefdom bye-laws for tree planting should not only be established but should be enforced accordingly. On the whole respondents' environmental mitigation suggestions primarily focused on regulatory and restoration mechanisms.

6.4 Diamond Mining and Environmental Management

Like the recently enacted Mines and Mineral Act 2009, the previous mineral regulations governing diamond mining in Kono District and the rest of the country underscore environmentally sound mining practices, yet the diamondiferous chiefdoms have witnessed extensive degradation of forest, land, and water.²²⁷ Article 92.1 of the 1994 Mines and Mineral Act states, "in deciding whether or not to grant mineral right, the Secretary of State shall take into account the need to conserve the natural resources in or on the land over which the mineral right is sought, or in or on neighbouring land." However, weak institutional capacity in the monitoring and enforcement of environmental regulations, unequal power relations between industrial mining companies and the national government, corruption and the scalar arrangements pertaining to land

²²⁷ These mining regulations include the 1994 Mines and Mineral Act, the 2003 Core Mineral Policy, the 2005 Artisanal and Small Scale Mining Policy, and the mining agreement between KHL and the GOSL.

access, control and utilization have created a number of environmental problems as discussed above.

The National Commission for the Environment and Forestry (NaCEF) is the main agency responsible for monitoring and enforcing environmental regulations, yet sound environmental management in Kono District has been forestalled due to a number of institutional issues. Interviews revealed that the commission lacks the institutional capacity to effectively monitor Kono's environment. Environmental monitoring officers were few and did not have the necessary logistics to execute their mandate. The problem is further compounded because government departments such as mines, agriculture and food security, lands, the NaCEF and Non-Governmental Organizations (NGOs) do not coordinate their activities and this has resulted in conflicting land use agendas. For instance, in 2006, the Ministry of Agriculture was about to implement an agricultural project in a diamondiferous chiefdom only for a diamond company authority to appear on the proposed site with a mining lease document. Although the local authorities had granted permission for the agricultural project, the central government through its mines ministry, overruled them and mining ensued²²⁸.

Although large-scale diamond mining companies have complied with national mining legislation (article 92.2 of the 1994 Mines and Mineral Act) and mining agreements that require each of them to produce an Environmental Impact Assessment (EIA) report, the manner in which the EIAs were done and the lack of effective monitoring of their activities have had negative environmental impacts on the district. A number of people indicated that they were dissatisfied with the manner in which EIA's were carried out by diamond mining companies and cited the case of Koidu Holdings

²²⁸ Interview with a senior environmental officer in Freetown, July 2008.

Limited. Most of them were unaware of community participation in the EIA process. Most times EIAs were not made public by companies and if they were it was the voluminous document rather than an executive summary that can be interpreted by community members. Therefore mining communities hardly knew the recommendations of the EIA documents. Part of the problem stems from the unequal power relations between the GOSL and Kono's traditional leaders on the one hand, and industrial diamond mining companies and the World Bank Group (WBG) on the other.²²⁹ In its quest for mining investment the government generally accepts EIAs without a critical assessment of its recommendations. The government was more supportive of companies and was less interested in addressing environmental concerns. Environmental protection was more of rhetoric than reality. Little or no environmental safeguards were put in place so that the government can hold mining companies liable for environmental problems not included in the EIA report. The GOSL also lacks the capacity to monitor if diamond companies are conforming to the environmental requirements. Further, mining companies failed to update their EIAs even when they had significantly modified mining operations as required by law. Yet, punitive sanctions for violation of the EIA guidelines were not in place. A senior official of FEES noted that though the National Diamond Mining Company's responsibility included land reclamation and rehabilitation, in its twenty years of operation the company did not comply. However, the government took no punitive action against the company. Interviews revealed that Koidu Holdings had deposited huge tailings in extensive areas that were not in the original agreement and that had increased degraded land in Tankoro Chiefdom. Yet, the GOSL and traditional

²²⁹ The World Bank Group (WBG) comprises the World Bank, the International Finance Corporation, the Multilateral Investment Group Agency and the International Monetary Fund.

leaders have not taken any punitive action against the company. African Minerals (formerly SLDC) mined intensively and extensively in Nimiyama and Sandor Chiefdoms but did not rehabilitate when they ceased operation in 2007. There was general consensus amongst focus groups and interviewees that diamond mining companies flout environmental regulations with impunity.

While the various mining laws included environmental protection and mitigation clauses, some of them were inadequate and/or ambiguous. The 1994 Mines and Mineral Act and the 2005 Artisanal and Small Scale Mineral Policy, did not subject artisanal miners to environmental reclamation except for the payment of 200,000 leones (~\$50) as rehabilitation fees.²³⁰ Mines officials indicated that the rehabilitation fee was very minimal, thus limiting land reclamation. However, many local residents pointed out that the mines ministry had not engaged in any form of land reclamation and rehabilitation even though all artisanal license holders pay rehabilitation fees. Small-scale mechanized miners (SSMM) were not subjected to environmental impact assessment (EIA) but (as of 2005) were required to submit a proposal for progressive reclamation and rehabilitation of land disturbed by mining and minimization of damage to surface and ground water and adjacent land. While such proposals demonstrated sound environmental practices, poor monitoring and enforcement were the major concerns. It should be noted that up to 2007, artisanal and small scale mining accounted for about 81% of alluvial diamonds produced in Sierra Leone and since Kono District produced 60 % of the country's diamonds, there was significant quantity of un-reclaimed land in the district.

Unregulated artisanal and small scale mining has serious environmental implications. Interviews revealed that diamond miners (especially foreigners) were

²³⁰ Likewise, the 2009 Mines and Mineral Act does not require EIAs for artisanal mining.

engaged in indiscriminate small scale mechanized mining that exceeded the maximum spatial extent of 100 acres with environmental consequences. In the case of artisanal mining, though the mineral legislation stipulated that a mining plot should not exceed 210 square yards (one acre), and that not more than five acres should be apportioned to artisanal miners, such laws were often breached. There were instances in which mines covered as large as 25 acres (PDA, 2005). This was due to poor monitoring, and corruption of some mining officials and traditional leaders. Consequently, a number of diamond stakeholders (that includes chiefs, dealers/supporters, miners, and dealers) who were operating in Kono District capitalized on such inadequacies to satisfy their economic agendas at the expense of the environment.

The scalar arrangement surrounding access, control and use of land have bearing on environmental outcomes. This is particular the case in a society where effective monitoring and enforcement of environmental regulation is weak. In the Kono District's customary land tenure system, local chiefs allocate land for various land uses yet the national government has absolute power in land allocation in the interest of national development. The national government allocates industrial mining leases while chiefs allocate land for artisanal and small scale mining, farming, housing and social infrastructure (see Chapter 5 for a full discussion). Government mines officials certify whether a proposed mining plot is suitable before issuing licenses. Thus chiefs' power in land allocation for mining can be overturned by the central government. Chiefs in general were more concerned with economic gains from surface rents and development funds and bribes. They therefore utilized their power and influence at the local level to apportion land through the legal and illegal channels. Miners can therefore seek land through the

legal channel or capitalized on the scalar structure by seeking land directly from the chiefs through the illegal channel. Mines monitors and wardens acquiesce to the illegal mining activities by accepting bribes. The non-monitoring of remote areas also facilitates illegal mining in those places further creating more environmental problems. Thus the socioscalar arrangement of land access significantly contributed to the extent of environmental decrepitude in Kono District.

6.5 Environmental Policy Implications

Research findings have shown that the environmental dimensions of the resource curse were manifested in the mining chiefdoms in particular and Kono District in general and point to the need for better environmental restoration measures. Apart from the ecological implications of an increasingly depleted environment, artisanal mining is on the decline in Kono District in the wake of dwindling near-surface diamonds while small scale mechanized and industrial diamond mining are expanding. As industrial mining cannot provide employment for the tens of thousands of artisanal miners, alternative economic activities should be available for those who have been displaced from artisanal mining. One possible land-based activity that could be viable to local residents in the mining chiefdoms is farming but this would require considerable transformation of mine-out lands.

Attempts at reclaiming mine-out areas and transforming them to community agricultural land have produced positive results at a small scale. The Foundation for Environmental Security and Sustainability (FEES) has been involved in a small-scale reclamation of mine-out areas in Koidu town, Tankoro Chiefdom and in Bumpeh, Nimikoro Chiefdom. From 2007 to 2008, they had rehabilitated 30 acres of mine-out

land in Koidu and 31 acres in Bumpeh totaling 61 acres.²³¹ FEES mainly utilized the services of unemployed youths who were paid a daily wage of 8,000 leones (~\$2.61) and provided with food valued at 2,500 leones (~\$0.82). FEES also provided agricultural implements and seeds for agriculture in the rehabilitated land. Agricultural outputs were distributed to the communities with supervision from the chiefdom authority. The One Sky in collaboration with Conservation Society of Sierra Leone (CSSL) have formed four co-operatives whose responsibilities are rehabilitating mine-out lands and cultivating them. While the activities of FEES are commendable it is a pilot project on a small scale.

The GOSL could build on the land remediation measures employed by NGOs to develop a hybrid model for scaling up. Those who rehabilitate land can be ensured longer-term user rights and ownership of harvest. Land use rights for a period of 25 years would encourage them to plant tree crops and promote biodiversity.

The GOSL could ensure that environmental remediation legislation be created and enforced nationally. The Government could ensure that extant and future mining be followed by immediate environmental rehabilitation on closure. This is partly so for industrial mining companies. Company should be required to sign contractual agreements to employ local residents to reclaim mine-out areas and remediation following industrial mining.²³² The government can also repeal rehabilitation fees payable by artisanal miners and instead legislate that artisanal miners are required to rehabilitate mine out land. Such provision should not be contingent on whether or not the mining venture was profitable. The government could then delegate restoration of mine-out areas to local government councils who could work closely with the NaCEF

²³¹ Interview with the field supervisor of FEES July 2008.

²³² Views of youth and diggers focus groups.

The GOSL could enhance the institutional capacity of the NaCEF if meaningful environmentally sustainable land-based activities can be actualized. This would enable NaCEF to fully implement the environmental clauses in the 2009 Mines and Mineral Act in the interest of mining communities in particular and the country in general. This would require the concerted effort of chiefdom and district councils, local and international environment NGOs, civil societies, mining companies and mining communities themselves.

Preventive environmental measures should also be put in place in the wake of mineral exploitation in southern-eastern and northern Sierra Leone. An updated inventory of geological deposits of diamonds that would demarcate land based on proven deposit would guide the MMR and chiefs in allocating land for mining. This would reduce the happenstance approach that is increasingly used in newly mining areas particularly in northern Sierra Leone.

6.6 Conclusion

This chapter has examined the environmental dimension of the resource curse and local livelihood implications in Kono District. Although environmental degradation was evident in the entire district, it was more pronounced in mining chiefdoms where several components of the environment had been degraded. While forest cover loss was greater in non-mining chiefdoms compared to mining chiefdoms, the poor and declining quality of remaining forest in mining chiefdoms had limited utility as a local livelihood source for local residents. It can be argued that forest-cover loss was prevalent in the entire district, yet diamond mining specifically has resulted in considerable land degradation and water-related issues that have adversely affected land-based local livelihoods.

Extensive diamond mining has created a number of barren lands, an expansion of water bodies, and damaged fertile wetlands and terrace land. As a consequence, farming as an alternate local livelihood has been adversely affected in mining chiefdoms. The expansion of water bodies has also served as breeding grounds for mosquitoes while contaminated water may increase the likelihood of water-borne diseases such as typhoid and dysentery in the absence of a piped water system.

The chapter has also discussed land use/land cover change during the war compared to pre and post-war periods. Four significant land transformations took place during the civil war period. These were forest re-growth, decline in agricultural land, a substantial growth in the spatial extent of water bodies and a significant decline in urban/settlement area. Peace periods however witnessed an expansion of agricultural land, urban/settlement areas, and bare ground while forest cover and grass land diminished. Although water bodies expanded in pre-war periods, they have declined in post-war period as a result of land reclamation activities.

The chapter has demonstrated that weak enforcement of environmental and mining regulations and agency of actors are the major factors leading to accelerated environmental degradation, and has called for remedial measures to reverse the environmental dimension of the resource curse. Of particular concern was the scalar arrangement surrounding access, control and utilization of land. Although there were policies for land allocation, traditional authorities utilized their local power and influence in land distribution for personal gain by facilitating legal and illegal exploitation of mining land. Remedial action would include stricter enforcement of mining and environmental regulations, land reclamation, and updated inventory of proven diamond

deposits. Effective environmental management would require concerted efforts from elected chieftdom and district council officials, the central government, local and international environmental NGOs as well as civil societies, mining companies and residents of mining communities to minimize the negative impacts of mining.

CHAPTER7: CONCLUSIONS AND POLICY IMPLICATIONS

7.1 Introduction

This dissertation has assessed the extent to which resource endowment, in this case diamonds, can forestall socioeconomic development rather than foster economic growth and development. In other words, the study has appraised diamonds as a resource curse in Sierra Leone with particular focus on Kono District. The spatial geography of alluvial diamonds and a weak regulatory state apparatus created conditions that resulted in four dimensions of the resource curse. These were illicit diamond exploitation, worsening socioeconomic conditions in mining communities, diamond-induced conflicts, and accelerated environmental degradation.

This chapter summarizes study findings and implications of geographic understanding of the degree of the resource curse in Sierra Leone. It also underlines the challenges of regulating diamonds, especially in SSA countries endowed with alluvial diamond deposits. Despite corporate monopoly during the initial years, diamonds contributed immensely to the national economy. The politicization of diamonds and the recession of formal diamond mining led to socioeconomic degeneration and discontent, culminating into a civil war. Findings from social surveys for the most part corroborate previous works that have addressed issues such as domination and marginalization of diamond miners/digger in Sierra Leone (e.g., Davies, 2006; Levin, 2006; USAID, 2005). Next, the dissertation hypotheses are discussed in relation to study results. Despite reformation of the diamond sector in post-conflict Sierra Leone, study findings indicate that illicit mining and marketing is a major issue. Actors capitalize on a weak regulatory state apparatus to satisfy their disparate agendas. Study findings point to exploitative

socioeconomic relations and significant economic disparity among diamond actors. Furthermore, unequal power relations between stakeholders have exacerbated conflicts over diamonds in mining communities. Satellite image analysis and local perceptions demonstrate environmental degradation in the district and pinpoint significant environmental impacts in the mining chiefdoms inimical to rural land-based livelihoods. The actor-oriented political ecology approach integrated with the social production of scale is discussed next. Finally, implications of research findings for geographic socio-environmental research and for mining and environmental policy are discussed.

7.2 Summary of Findings

The spatiality of diamonds and social and economic factors influenced illicit diamond exploitation in the district. The remote location of diamonds spread regulation thin and facilitated illegal mining, which was also almost exclusively, associated with diffuse, surficial alluvial diamond deposits relative to deep, concentrated, kimberlite deposits. In response to a possible spatial linkage between remotely located mines and illicit mining in Kono District, 71.1 percent of respondents indicated that illicit diamond mining was greater in remote areas than in areas closer to town. Furthermore, 59.7 percent of respondents said that there were positive associations between spatially diffused diamonds and rates of illicit mining. The location of mining areas near porous borders with Guinea and Liberia further facilitated the smuggling of diamonds.

Socially, study findings showed that illicit diamond mining was mainly driven by economic constraints, limited government capacity, corruption and economic incentives. Lack of social connections to chiefs also hindered a miner's chances of obtaining a license. It was believed that those who resorted to illegal mining did not have political

and social connections and therefore obtained marginal mining plots or none at all. Diamond smuggling was also driven by economic incentives and inadequate border controls. Although a majority of respondents (61.7 %) mentioned that the main driving force behind diamond smuggling was better market prices in other countries, this was feasible primarily because the government lacked the capacity to effectively control the border between Sierra Leone and Guinea, and also Liberia. Economic incentives and inadequate border monitoring provided opportunities for smugglers. As a result of powerful local and international networks, particularly in neighboring countries illicit dealers were able to 'jump scales' in anticipation of higher prices at the international level.

Unequal power relations among actors in relation to diamond mining affected socioeconomic conditions, including reinforcement and widening of economic disparity and access to mining rights. While corrupt chiefs and mines officials have been able to benefit socioeconomically, the majority of people who lacked social connections and/or political-economic power were not able to access mining land. Labor relations amongst actors involved in artisanal and small scale mining were dominated by a patron-client system, though agency of diggers also prevailed. Labor arrangements were structured in such a way that supporters (financiers) provided minimal welfare for diggers but at great economic cost. This was reflected in the household survey as 70.6 percent of respondents (valid n= 218) indicated that supporters (mainly foreigners) were the major source of capital. A number of respondents (47.4%) believed that diamond earnings were distributed unfairly. In fact, diggers that were mining independently in unlicensed areas

were in a better position to realize better economic rewards from diamonds compared to benefits obtained through supporters/miners.

Although diamond-induced conflicts took different forms, of growing concern in post-conflict Sierra Leone were corporation-community conflicts and conflicts between communities and their traditional leaders. Study findings showed that corruption or perception of corruption was the major source of conflicts between communities and traditional leaders. A number of respondents (24.1%) also maintained that inaccessibility of EIA and corporate lease agreement documents (14.7%) triggered conflicts. Other respondents (32.2%) pointed out that limited access to land for mining was a major driver of conflicts between local residents and corporate entities. There was asymmetry in power relations between communities/chiefs and corporations/state in favor of the latter. Furthermore, the failure of companies to comply with lease agreements (31.1%) and the non-representation of local residents in lease-agreement negotiation were cited as precipitants of corporation-community conflicts. Study findings showed that conflicts between diggers and miners/supporters occurred when diggers hid diamonds and sold them to a miner/supporter that did not support them, when diggers were funded by two supporters and decided to sell to the one who expended less in order to receive a bigger share of the winnings, and when miners did not share winnings fairly. A majority of them (75.4%) pointed out that the major precipitant of conflicts between diggers' groups were mining plot border dispute.

Struggles over access and control of diamonds were manifested in disparate ways. These included occupation of corporate mining sites, fighting, and confrontation between demonstrators and companies' security officers. The occupation of the mining sites of

AV Charge and Kariba Mining Companies illustrates ways of resistance of aggrieved groups — ‘weapons of the weak.’ The illicit mining in KMC was an effective though short-lived way in which diamond diggers gained economically even though structural constraints were evident.

The study also showed that while environmental degradation was evident in the entire district; there were some significant temporal and spatial variations. Remote sensing analysis revealed that there were moderate increases in agricultural land, water, bare ground and urban/settlement, while forest and grass decreased moderately during the pre-war period (1986 to 1991). However, the civil war period (1991 to 2002) witnessed a consideration decline in agriculture, urban/settlement, and grassland. The period was also witnessed natural forest re-growth, significant increase in water bodies, and bare ground. These LULC changes were primarily due to conflict diamond exploitation, violent actions by rebellious factions, and population displacement. Restoration of socioeconomic activities after the civil war has led to significant expansion of agricultural land and urban/settlement areas. Further, there has been phenomenal reduction in grassland, forest and the spatial extent of water.

Comparison of LULC change in mining and non-mining chiefdoms within the three time periods have also shown that environmental dimensions of the resource curse was more pronounce in the mining chiefdoms. Although satellite image analysis revealed more forest in mining chiefdoms in the entire study period (1986 to 2007), other sources (local residents and personal observation) showed that better quality forest was prevalent in non-mining chiefdoms. Satellite images analysis showed that the spatial extent of water was higher in mining than non-mining periods for the three time periods but it was

considerable greater during the war period. Reduced grassland, less agricultural land and increase in areas covered by water from diamond mining activities have implications on non-mining economic activities especially agriculture.

An assessment of environmental degradation in mining and non-mining areas revealed a number of environmental problems with local livelihood implications in mining chiefdoms. Though forest cover loss and soil erosion were manifested in both areas, diamond mining had damaged a considerable amount of arable wetlands and terrace lands. Numerous mine-out areas were not reclaimed, further increasing the amount of degraded land. The difficulty of accessing the limited forest in mining chiefdoms and the poor quality of remaining forest also affected the livelihoods of local residents who were reliant on forest products. Study findings showed that while there was decline in agricultural productivity in both areas, it was more pronounced in mining chiefdoms. As industrial mining expands, and artisanal mining dwindles because of declining known deposits, access to land for farming and forest products will become a major challenge for local residents in mining chiefdoms. On the whole, environmental degradation was primarily associated with physical mining activities due to a weak regulation and enforcement by the local and national governments, and significantly contributed to the resource curse.

7.3 Hypothesis 1: introduction and maintenance of patrimonial politics and growing informalization of diamond exploitation in Sierra Leone have historically reduced the positive role of diamonds in national and local economic development largely into a resource curse.

In addressing this hypothesis I examined diamond mining and marketing in Sierra Leone within four political eras. The primary aim was to assess the extent to which

diamond exploitation facilitated or undermined the development aspirations at the local and national levels. For the most part diamond exploitation fostered national economic growth and development during the colonial era and the initial years of independence. In the early 1960s it accounted for about 20% of GDP and 60 percent of foreign exchange earnings (Davies, 2006). The SLST assisted in the provision of social services such as education and health in mining areas and employed thousands of laborers. A number of local residents participated in artisanal mining and the local economy benefited from linkages with diamond mining and marketing.

However, the politicization of diamonds under the leadership of Siaka Stevens' patrimonial and kleptocratic rule resulted in substantial growth of informal mining and receding of formal mining. As a consequence there was significant socioeconomic decline at the national and mining community levels. As of 1990, diamond mining accounted for only 0.2 % of GDP (Davies, 2000). As shown in Figure 7.1, the official value of diamond exports witnessed a precipitous decline during Stevens' patrimonial rule and worsened during the civil war. From an economic standpoint, not only did the economic contribution of diamonds decline precipitously, but the associated negative social and economic impacts meant that diamond exploitation had become more of a resource curse than a blessing at the national level in the years leading to the war. Significant socioeconomic decline, high unemployment especially amongst youths, and social injustice lead to growing resentment and accumulated grievances against the kleptocratic Stevens' government. This general disenchantment combined with grievances of access to diamond resources and rights, culminating in a civil war — the ultimate manifestation of the resource curse. The civil war, however, created economic

opportunities for war factions and external players; while these groups amassed wealth from conflict diamonds, the majority of Sierra Leoneans suffered the socioeconomic and political costs. Although physical infrastructure was badly destroyed in the country as a whole; mining areas like Kono and Tongo suffered the worst devastation.

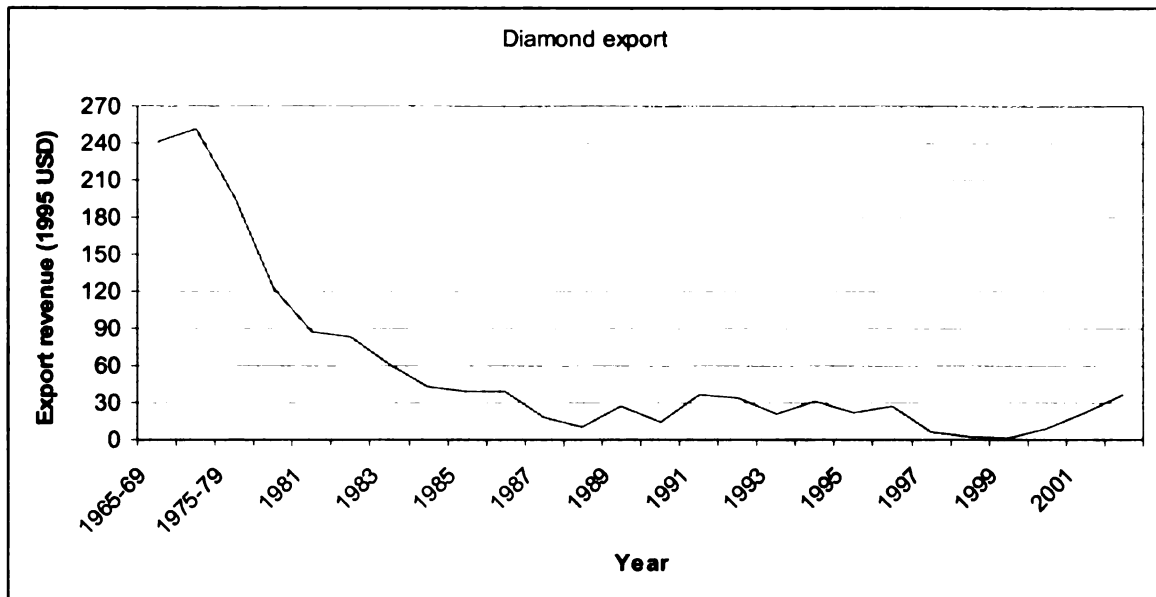


Figure 7.1 Value of Sierra Leone diamond exports (in 1995 \$)

* Data source: Davies (2006)

Despite the accretion of mineral export figures in post-war years following the expansion of industrial mining, the amount of mineral revenues paid to governments' (national and local) have been minimal. In fact, in 2007, the GOSL only received about \$5.9 million (or 4.16% of the value of diamond exports) as diamond revenues (NACE, 2009). While mining communities have received money from the DACDF for community development programs, this has not reflected in reduced household poverty in

mining communities.²³³ Consequently, official mineral revenues have not made a significant impact on the socioeconomic conditions of local residents in mining communities. Though there is semblance of peace, diamond mining has yet to make meaningful benefits in Sierra Leone.

7.4 Hypothesis 2: Diverse social actors at local, national and international scales have taken advantage of the weak regulatory state apparatus in Sierra Leone to exploit diamonds in ways that turned a rich endowment of a rare, portable, precious mineral more into a curse than a blessing.

The extent to which illicit diamond exploitation constitutes a resource curse was examined. Analyses of social surveys and secondary data showed that illicit diamond mining was mainly driven by the government's limited capacity to monitor mines, corruption, economic constraints and perverse economic incentives, most of which were symptomatic of a weak state. Ultimately, illicit diamond mining was a resource curse at multiple scales: the mining communities in particular and the central government in general as it undermined optimum mineral revenue collection for household-level, local and national development and it made the playing ground uneven for various players. In 2006 alone, an estimated \$31.25 million worth of diamonds were smuggled out of Sierra Leone. As a result the GOSL lost at least \$1.32 million from export taxes and an additional \$101,700 from non-payment of diamond licenses. Mining communities were also deprived of maximum amount of surface rents and DACDF. Maximum revenue from these sources could have aided community development.

However, a network of a minority of people mainly corrupt chiefs, government mines monitoring officers and illicit dealers and supporters derived

²³³ Most of these programs have not provided avenues by which household poverty can be alleviated.

most of the local economic benefits at the expense of the majority. Illegality exposed many diggers to exploitation mostly by supporters and dealers, with limited or no options for recourse. Illicit marketing also presents a continuing security threat nationally and undermines the global diamond regulatory system – the KPCS. Illicit diamond mining and marketing thrived under complex socio-spatial relations amongst local, national, and external actors who capitalized on the weak capacity of the weak state. Although weak institutional capacity and monitoring were cited, corruption amongst traditional leaders and government mines officials were also underscored. Results therefore corroborate Levin's (2006), and Davies' (2006) findings that underline weak regulation of mines and social networks as drivers of illicit diamond mining.

An element of a weak regulatory state – patron-client relations – was also evident in assessing the degree of the resource curse. The central issue here was the effect of patron-client relations between actors/stakeholders especially between supporters (financiers) and diamond diggers/miners. In this study, patron-client relations are informal agreements between financiers and diggers on the understanding that diggers provide services for mining while supporters provide basic social needs in addition to mining implements. While this provided employment opportunities for thousands of predominantly male laborers, such arrangements were not legally binding. Financiers could exploit diggers/miners. An informal patron-client system dominated by foreign financiers (who are considered exploitative) had economic implications for local diggers/miners. Although financiers were expected to make more profit than diggers,

significant economic disparity between financiers and diggers left the disempowered digger in a state of poverty.

Socio-spatial relations of empowerment and disempowerment were widespread in the areas of access to land, capital, labor, and the marketing of diamonds. As a result, the less powerful tried to gain liberty and satisfy their social and economic agendas by jumping scales. Escaping from the patron-client system to an independent miner involves jumping from a local scale to a smaller scale of 'ghado' or 'overkicking.' Yet, on the whole the less powerful remained socially and economically disempowered and continue to live in poverty while the few (chiefs, government mines officials, Lebanese and Maraka supporters) lived in affluence.

Findings show significant economic disparity between supporters/dealers and diggers, which underscores the marginalization of diggers. The mean annual household mining income of supporters/dealers was \$1637.02 whereas that for diamond diggers' households was \$263.52.²³⁴ Thus on average, the supporter/dealer received 6.2 times more income from diamond winnings than a digger. A further attestation of the economically unfavorable state of diggers was that ordinary farmers were better off economically as they earned higher mean annual household income than diamond diggers. Unlike their South American counterparts who received at least \$7 a day, diamond diggers in Kono earned less than \$1 a day. Therefore, diamond diggers in Sierra Leone were in an economically deprived condition, a manifestation of the economic dimension of the resource curse. As of 2007, diamond mining increased the household income of only 27.9 percent of households, almost all of whom (92.5%) said it was

²³⁴ Most of the household respondents were Sierra Leoneans and those that are dealers and mainly middle men and dealers' agent. Most foreigners declined household interviews.

through direct diamond sales rather than wages (only 4.5%). During the same period, 36.3 percent of respondents indicated that diamond mining income increased their social status. Most of them (84.1%) also indicated that it was through direct diamond sales. Thus diamond diggers remained poor as many of them worked for supporters/dealers and therefore could not sell diamonds.

Nevertheless, diamond mining (artisanal, small-scale, and industrial) played an instrument role in a country in which lack of rural economic diversification was evident. Having some income from a system considered exploitative was better than having no income. In fact, household perceptions about diamond exploitation as a resource curse revealed interesting but contradictory responses. While 47.4 percent of respondents believed that supporters/dealers distributed diamond winnings to diamond diggers/miners unfairly and 11.3 percent considered it was average, their overall economic assessment of diamond mining as a resource curse was mixed. With reference to whether diamond mining was a resource curse at the household levels, 47.9 percent said it was a blessing, 42.9 percent said it was a curse while 9.2 percent said it was neither a curse or a blessing. With regards diamond mining as a resource curse to community, 38.3 percent said it was a blessing while 61.7 percent said it was a resource curse. Thus from an economic standpoint, households' perception as to whether diamonds were a curse varied. However, most considered diamonds a resource curse at the community level.

Elements of a weak regulatory state apparatus also led to another dimension of the resource curse – diamond-induced conflicts. The perceived corrupt practices of traditional leaders with regards the use and accountability of mining revenue and in allocating land for mining purposes led to conflicts between chiefs and mining

communities. This was largely due to lack of transparency and accountability as there was no oversight. There was also a strong accusation that chiefs acquiesced to what was considered unfavorable mining practices of companies because of conflict of interest.

Of major concern in post-civil-war Sierra Leone are structural reforms that favor industrial mining at the expense of artisanal mining. The GOSL generally adhere to the dictates of the World Bank Group by providing enabling environment for industrial mining-led development. However, such transformation resulted in corporation-community conflicts. The weakness of the state in ensuring that companies adhere to mining clauses such as adequate land compensation, resettlement and community development programs, also led to violent conflicts. Furthermore, the lack of suitable underground mining and blasting regulations and poor monitoring of the activities of industrial mining companies had led to confrontation between companies and communities.

Grievances and perceived social injustices and the absence of effective, non-partisan conflict resolution institutions at the mining community level had also exacerbated conflicts, a clear manifestation of the resource curse. Resource abundance and violent conflicts at the community level is a cause for concern especially with the growth of industrial mining companies and the diminution of artisanal mining.

In sum, the research has proved that diamond exploitation is more of a resource curse than a resource blessing when examined in entirety and that such outcomes were primarily the result of a weak regulatory state. While illicit diamond mining and trading, diamond-induced conflicts and the social outcomes were more of a curse than a blessing, economic outcomes were mixed.

7.5 Hypothesis 3: *Geographically diffuse and remotely-located, highly valuable natural resources are more a liability than an asset.*

The geography of diamonds can influence the extent to which diamonds can foster socioeconomic development or create conflict-ridden underdevelopment. Research findings suggest that the political geography of diamonds, particularly alluvial deposits, can be more a liability than an asset for the government and people of Sierra Leone. In the case of Kono District, study findings demonstrated that illicit diamond mining was acute in remotely located mining sites than in extractive sites closer to towns. It also revealed a strong association between spatially diffuse diamonds (alluvial deposits) and illicit mining. The research has unearthed that diffuse (spatially disperse) diamonds were more susceptible to illicit exploitation than point resources – kimberlite diamonds – which are concentrated in a small geographic location and require highly mechanized input to reach their deep location, but can be easily monitored. Findings of this study therefore corroborate Le Billon's (2005) political geography of natural resources. Further, spatial proximity facilitated diamond smuggling from Kono District through the porous Guinea and Liberian borders to regional and international diamond markets. Interviews showed that proximity to border and the length of the border had made it easier for diamond smugglers. Other studies have also underlined spatial proximity and smuggling of alluvial diamonds in Central Africa (Barthelemy et al., 2008; Boek, 2008). For instance, Boek (2008) explains how diamonds were illegally trafficked between Angola and the DRC.

Spatiality of diamonds also undermines economic returns to the country and affects the physical environment. In the absence of effective monitoring, diamonds in remote locations can be mined and smuggled to Liberia and/or Guinea. This reduces

official mineral revenue needed for national and local community development in a post-civil-war country. Furthermore, extraction of spatially diffused diamonds requires extensive land cover clearance thus affecting the physical environment²³⁵.

7.6 Hypothesis 4: *Environmental conditions in diamond chiefdoms are worse than in non-diamond chiefdoms*

Remote sensing analysis and social surveys have shown that there were more environmental problems in the mining than the non-mining chiefdoms. The analysis demonstrated that the environmental dimensions of the resource curse were more manifested in the diamond mining chiefdoms. Although satellite image interpretation indicated that mining areas had more forest cover, social surveys, interviews, and personal observation showed that the quality of forest (mainly a mixture of shrubs and trees) was poorer in mining chiefdoms. LULC change analysis demonstrated that civil war can alter the extent of land cover change that occurred during peace periods. This was evident in four land covers. First, though there was a reduction of forest during the peace periods (1986 to 1991 and 2002 to 2007), there was natural forest growth (6.7 percent) during the civil war period. This seems ironical as civil wars normally have considerable negative social and ecological consequences on forest resources (Dudley et al. 2002; Alvarez 2003; McNeely 2003). Second, was a significant increase in areas covered by water during the war period. Indiscriminate mining of diamonds led to more dugout pits that were filled with water thus increasing the spatial extent of water by 51.8 percent. Third, was the sharp decline in land under agriculture during the civil war era compared to pre and post-war periods which witnessed growth in agricultural land. Lastly, was the continual reduction in grass land cover during and outside the war period.

²³⁵ Alluvial diamonds spread over 7,700 square miles of the country's land which is about a quarter of the spatial extent of Sierra Leone – 27,925 square miles

During the war bare ground increased by 99.4 percent while grassland declined by 27.7 percent compared to the pre-war period during which it declined by 15.3 percent. Further, gains in forest cover were associated with and occurred during the civil war particularly in non-mining chiefdoms as there was virtually no economic activity in non-mining areas as the population had forced migrated to safer places. The period 2002 to 2007 witnessed significant transformation in land use/land cover. There was forest cover loss in both areas but it was higher in agricultural areas. While forest cover accounted for 56.5 percent of land cover in mining areas it covered 31.2 percent of non-mining chiefdoms. Area under agriculture comprised 12.1 percent of land in mining chiefdoms and 54.5 percent of non-mining chiefdoms. Local, national, and regional demand for farming products, increasing population in non-mining chiefdoms (due primarily from migration from mining chiefdoms) necessitated the expansion of agriculture. Bare ground, urban/settlement and surface water land-cover classes had increased in diamond chiefdoms while the spatial extent of grassland and agriculture had increased in non-mining chiefdoms. Resumption of mining and farming activities following the resettlement of people were mainly responsible for such land use/land cover transformation.

The environmental impacts of diamond mining have broader implications as the forest, land, and water were affected. While the spatial extent of forest was lower in the non-mining areas as a result of more spatially extensive agricultural activities, the transformation of fertile lands (wetlands and terrace areas) to mining land had negative consequences on the agricultural productivity of local residents in mining areas. Earlier works on diamond mining in Sierra Leone have also highlighted the negative impacts of

mining on agricultural productivity (Gbekie, 2003; Momoh, 2002). However, they did not employed remote sensing analysis to capture the spatial dimension of land use/land cover change. The combined effects of loss of fertile agricultural land and dwindling forests in both cover (deforestation) and quality (degradation) had negative impacts on the socioeconomic condition of many local residents in mining chiefdoms that relied on alternate local livelihoods to supplement their increasingly low returns from artisanal mining. On the whole, the study has shown that environmental degradation was a serious problem in Kono District though the net effect was more pronounced in diamond mining chiefdoms. Thus, the environmental dimension of the resource was evident in the district, an outcome driven by the activities of a number of actors both within and out of the district.

7.7 Actor-Oriented Political Ecology, the Politics of Scale and the Spatial Resource Curse

The study has utilized the actor-oriented political ecology approach to examine the extent to which diamonds constitute a resource curse in Sierra Leone drawing from a case study of Kono District. Unequal power relations among diverse social actors operating at multiple spatial scales with regard to access, control, and utilization of diamonds imply wealth formation for some and impoverishment for others, and it also alters the ability of actors to control or resist other actors (Bryant 1997:29). The extent to which diamond exploitation in Kono District constituted a resource curse was shaped by forces at the chiefdom level as well as broader socio-political and economic factors at the national, sub-regional, and international levels.

Illicit diamond mining was driven by sociospatial relations amongst actors mainly at the local level as they try to fulfill their socioeconomic agendas. Diamond dealers at

the district and/or national levels maintained nested relations with legal and illicit diggers and were able to integrate some of the illegally mined diamonds into the legal marketing channel. However, unequal power relations between dealers and illegal miners and the risk involved in trading illegal diamonds at the local level resulted in lower purchasing prices. Thus diamond dealers apparently made higher profits from stones bought from illegal diggers/miners than from legal ones. While illegal miners may have earned more than what they would have received in wages or share of net revenues from a supporter, the difference was not significant enough to permanently lift illegal dealers out of poverty. Unequal power relations between the pair of illicit actors invariably favored the more powerful dealer.

Albeit national mining laws require that the miners acquire licenses before engaging in mining, the absence of an effective monitoring system, economic constraints, and corrupt practices of chiefs and government mines officials facilitated illicit diamond mining. Social relations and a complex network of actors further facilitated illicit diamond trading (smuggling). The network included miners, supporters, dealers, the 'open yai' [illegal dealers] associations operating at the district and national levels, and international diamond buyers. Perverse economic incentives – higher diamond prices in neighboring countries – attracted smugglers who 'jumped' the scale of transaction by bypassing the national certification process and selling directly at the sub-regional level. Perverse incentives also provided agency for marginalized diggers/miners at local scale, who pursued their aims at a larger (regional) scale by smuggling diamonds to another district in the hope of turning the balance of power to their favor. In order to achieve this,

some of the diggers simultaneously re-scaled their operations to the smaller scale of independent illicit mining without a supporter.

Political ecology has served as a useful framework for examining struggle for access and control of mineral resources, and its environmental impacts. Struggle over access and control of diamonds during the civil war was triggered by various war protagonists as well as regional and international demand by both rogue and legitimate diamond dealers. This ultimate conflict—civil war—also had environmental impacts especially on forests and land and water with implications on local livelihood. In general, environmental degradation in mining communities was partly influenced by sociospatial dynamics in regard to access of mining land and poor enforcement of environmental protection regulations by government authorities. Social connections to chiefs, sociospatial network of landowners, miners (both legal and illegal) and the social relations between illegal miners and government officials (especially mines monitors and wardens) had played significant roles in access, control and utilization of land in both the legal and illegal conduits.

Spatialized social relations surrounding access to land, labor, capital, and marketing of diamonds resulted in empowerment and disempowerment of different sets of actors. A network of mainly foreigners controlled capital and the marketing of diamonds, through which they had a strong hold on local labor and created economic dependency on the network. Powerful and influential chiefs at the local level and national political actors dictated mining land allocation. As a result of the exploitative tendency of dealers/supporters, diamond diggers normally receive less than what they would have got if fair prices were employed. While socioeconomic inequities are normal in most

societies, dealers received at least 6.2 times more income than diggers. Consequently the less powerful attempted to gain liberty and satisfy their social and economic agendas by jumping scales. Escaping from the exploitative patron-client system to independent miner status involved jumping from the local miner/digger scale of operation to the smaller scale of 'ghado' or 'overkicking' (mining from pre-mined gravel). However, the less powerful remained socially and economically disempowered and continued to live in poverty with an average yearly mineral income of \$ 263.52 (about 72c a day). The resulting desperation and perceived social injustice resulted in occasional conflicts among various actors.

Although conflicts were manifested at the local level, they were strongly influenced by national and international policies and institutional factors. Diamond-induced conflicts were primarily due to unequal power relations amongst the various actors over access and control over land. International pressure from the WBG and government interest in attracting considerable foreign investment into mining has led to the prioritization of industrial over artisanal mining. The absolute right of government over mining at the expense of local communities, perceived corrupt practices of traditional leaders, and the inadequate representation of community groups in mining-land allocation, and negotiations of government/corporation contracts have created tension at the mining community level. Occasionally, ensuing grievances and perceived social injustices have culminated into physical conflicts, a manifestation of the resource curse. Such violent conflicts at the community level are worrying, more so with the expansion of industrial diamond mining and contraction of artisanal mining and potential for more tensions between local communities and corporations.

Political ecology has been criticized for emphasizing the political at the expense of the ecological dimensions of human-environment interactions (Bryant 1997; Zimmerer and Bassett 2003; Walker 2005). It has also been challenged for underscoring the ecological while downplaying the politics (Walker 2007). Others maintain that it lacks disciplinary coherence, thereby restricting intellectual and policy influence (Bryant 1997; Peet and Watts 1996). However, its emphasis on the socio-spatial dimensions of power relations surrounding resource exploitation (in this case diamonds) within an actor-oriented approach, help it to minimize the analytical impact of these shortcomings. The actor-oriented focus allowed critical examination of the complex interplay among political, social, economic and environmental processes surrounding diamond mining, nuanced with explicit examination of the mediating impact of space, scale and associated agency in the politics of scale. Such linkages are often absent in purely mining-based or purely environmental studies, and certainly in diamond mining in Kono District. This is the main academic contribution of this study.

The social production of scale theory ('politics of scale') was instrumental in this study as it nuanced the actor-oriented approach of political ecology by making space an integral part of the expression of power relations among diverse actors operating at multiple scales in diamond exploitation and in the creation of the resource curse. Space and scale are avenues through which power relations are expressed and a strategy to fulfill individual and/or group agendas. Unequal power relations between dealers/supporters and diggers at the local level resulted in economic marginalization of diggers while dealers/supporters earned substantial mineral earnings. In trying to enhance their economic and liberatory agendas, diggers created spatial scale for

independent illegal diamond mining that included a network of actors at the chiefdom and district levels. While such socially produced scale benefited illegal diamond mining actors socioeconomically, it resulted in diminishing official earnings for the local and national governments in lost taxes.

A number of actors also utilized scale and/or space to satisfying their various agendas. Chiefs expressed power and influence in diamond mining at the chiefdom level by employing various spatial tactics that exploited their meso spatial scale between local communities and the local and national government for sociopolitical and economic gains from both. Although they facilitated official diamond mining, they also utilized the chiefdom scale for economic pursuit by colluding with illegal miners. Government mines officials also utilized the local scale and their administrative power for economic gain by maintaining relations with and extracting informal rents from illegal diamond miners. Furthermore, some actors utilized remotely located spaces for economic gains. Since remotely located mining areas were subjected to little or no monitoring by government mines officials, some actors were able to extract diamonds illegally from remotely located places. By evading diamond mining license fees, and for some of them, sidestepping the 'supporter' system, they were able to realize higher earnings from diamonds. The spatial dispersal of diamonds also facilitated the activities of illicit miners as it made it difficult for government to monitor such an extensive mining area. An extended, porous border with proximity to Guinea and Liberia and considerable entry points, also facilitated smuggling and the jumping of scales of diamond trading. Thus the agency of scale and space were fundamental in diamond exploitation.

The government also utilized scale and scalar reconfiguration to satisfy its political and economic agendas. By providing economic incentives to communities through the DACDF, the government exploited the more penetrating, effective and relevant monitoring governance of the local/community scales to achieve broader mines monitoring. Government officials realized their weaknesses and used this spatial rescaling strategy in a win-win situation. Thus, there was a significant increase in official diamond production and an increment in diamond earnings for the local and national governments following a reconfiguration of the scalar arrangement of monitoring.

Politics of scale was also useful in demonstrating that companies used the national scale for processing industrial mining documents and often sidestepped local authorities. The exclusive rights of the central government and pressure for the WBG have strengthened the position of industrial companies. Sociospatial scale therefore has agency in marginalizing local interests for national ones. Yet the domination and marginalization of local mining communities have led to conflicts with multiple ramifications.

Socially produced scales created different economic outcomes for actors engaged in diamond trading. While diamond trading (both legal and illegal) at the mining pit level benefited diamond peddlers and to some extent diamond miners, sales at the chiefdom and district levels—particularly those within a ‘supporter’ system—reduced the potential benefit of diamond diggers. Those who jumped scales and traded diamonds illicitly at the international scale (in neighboring countries) obtained better earnings due to better prices and tax evasion. The study also revealed that diamond dealers/supporters can continuously reconfigure and reproduce scale of diamond purchasing in terms of extent and resolution. By broadening their scale of supporting diamond mining countrywide, a

diamond dealer was able to increase the quantity of diamond that financially supported miners brought to him for sale. However, such purchases included legally and illegally mined diamonds, with the latter being economically disadvantageous to the districts of extraction and the national government.



Figure 7.2 Social actors and scalar dynamics of the resource curse ('pyramid of scales')

In particular, this study revealed that the scalar dynamics surrounding formal diamond exploitation demonstrates the 'uneven' distribution of the resource curse to the extent that we can speak not simply of a resource curse, but a spatial or scalar resource curse. In other words, while some actors bore the socioeconomic costs of diamond

exploitation, other actors derived most of the economic benefits. As indicated in Figure 7.2 above, the value of diamonds exponentially increases as they are transported from the local level (mining communities) through the national level to the global scale. As shown in Figure 7.3 below, there is a local-national-global flow of legal diamonds from mining communities to the capital city of Freetown and then onto Europe, and a local-international flow of illegally marketed diamonds from mining communities to neighboring countries.²³⁶ The extent to which diamonds constitute a resource curse from an economic standpoint is greatly manifested amongst diamond actors at the bottom of the 'pyramid of scale.' In other words, the resource curse is mainly applicable to the hundreds of thousands of diamond diggers and hundreds of miners/license holders at the local level (mining community scale). As one approaches the apex of the pyramid, the estimated value earned from a carat of white diamond (most valuable gem) increases exponentially and these are the real winners of diamond exploitation. This spatial or scalar nature of the resource curse is hardly mentioned in studies that examine mineral-rich developing countries. Instead, the resource curse is portrayed as a uniformly acting phenomenon.

²³⁶ Most diamonds mined in Sierra Leone are first taken to European cities after which they are transacted to other diamond stakeholders worldwide.

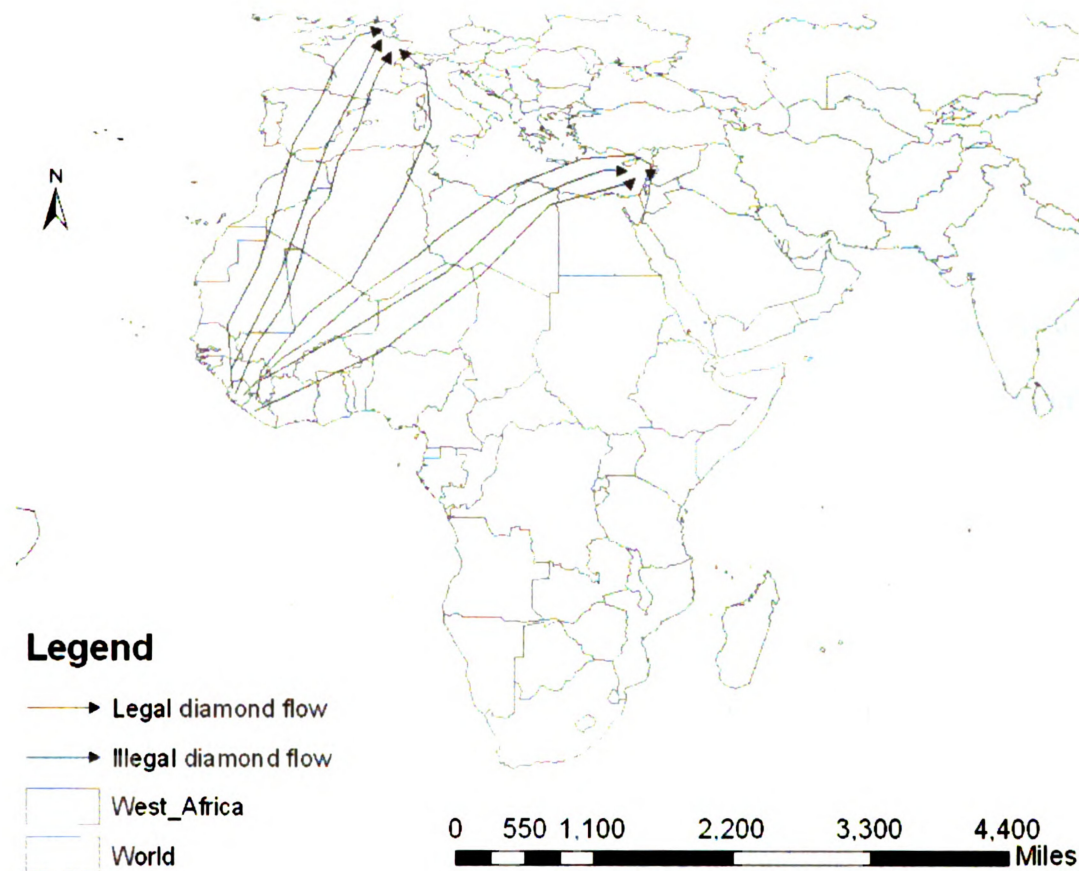


Figure 7.3 Major routes of transaction of Sierra Leone's diamonds

To exemplify this, a diamond dealer/supporter would on average receive 7.69 times more than a digger for a one carat white diamond while a diamond dealer in Antwerp would receive 19.23 times more than a local dealer for the same gem (rough diamond). In fact, once the diamond is polished its value increases significantly, thus further widening the gap between a local actor and a managing director of a diamond company that deals with polished diamonds along the diamond commodity chain. Once polished, a one carat white diamond is worth about \$12,500, which is five times its value when bought as a rough gem by a dealer in Europe, 12.50 times more than what a 'supporter earns for it, and 96.15 times more than what a digger earns for it. Although most actors incur expenditure in diamond mining and marketing, yet there is significant

disparity between local and international diamond actors. Thus, the sharp economic differences between actors at the local and national levels and diamond actors at the international scale demonstrate that the further one moves down the pyramid (scale-levels), the deeper the resource curse, and therefore characterize the latter as a spatial or scalar resource curse. Viewing the resource curse as such helps to see intuitively what corrective action is needed and at what scales. It points to the need for strategies that increase the value of the diamonds that accrues to the base of the pyramid of scale of diamond exploitation.

7.8 Implications and Conclusions

A number of SSA countries are faced with the problem of a rich mineral resource endowment and conflict-ridden underdevelopment, and Sierra Leone is a typical example. Although the resource curse has been examined mainly at the national and cross-country levels, such analysis often neglects the environmental dimension of the resource curse and focuses on aggregated or generalized analysis of the resource curse, especially from economic and political standpoints. A critical examination of the extent of the resource curse mainly at the local and national levels using social surveys and remote sensing analysis, and adopting the actor-oriented political ecology approach provided a more nuanced and robust understanding of the complexities and extent of social, economic, and environmental dimensions of the resource curse. It has shown that the spatial geography of diamonds (especially alluvial diamonds) and elements of a weak regulatory state apparatus have created conditions that powerful international and some local actors capitalized on. Further, unequal power relations between

supporters and diggers, and between chiefs and their subjects with regards to access, control and utilization of diamonds have improved conditions of the more powerful at the expense of the marginalized, less powerful 'junior' actors.

This dissertation research has implications for the geographic and mineral exploitation literature. It extends geographic political ecology research that has traditionally addressed deforestation, land use/land cover change and water, into mineral exploitation. By incorporating the social production of scale, the study also contributes to the politics of scale literature. Furthermore, by demonstrating that environmental impacts are one manifestation of the resource curse, the study has utilized the actor-oriented political ecology to add another dimension of the resource curse to traditional analysis. The study linked the environmental dimension of the resource curse to potential negative impacts on local livelihoods especially with the expansion of industrial mining and decline in artisanal mining in most mineral-dependent countries in SSA. To the development literature, the study has demonstrated that civil war conflicts can lead to atypical spatial environmental outcomes. It has also demonstrated that mineral-induced community conflicts, beyond the traditional narrow focus on national violent conflict of conflict diamonds is a pivotal dimension of the resource curse especially in post-conflict mining countries. It also has potential national security risks that can lead to the return of the civil war in Sierra Leone.

The research also has some policy implications. The research has revealed that diamond management at the national level with the involvement of only chiefs at the local level would not mitigate significant negative outcomes of the

resource curse. Policy makers would do better by focusing on cross-scaling institutional arrangements that would involve the newly established local governments and representatives of mineral communities. Examination of power relations constituted the pros and cons of managing diamond exploitation. Rather than concentrating power in diamond-area land allocation committees (often dominated by paramount chiefs), policy makers should employ broad-based strategies to empower mining communities so that they can elect good chiefdom council members that can be accountable to them. Equity and transparency in the distribution of mineral revenues could minimize potential conflicts between corporations and mining communities. The decentralization process can improve revenue management at the local level provided independent oversight institutions are created and punitive measures are in place to prosecute those who are culpable of financial impropriety. Mechanisms should be found to improve community representation for the capture of local community interests in corporation diamond mining and related contracts.

The bottom line is that community members want to improve their socioeconomic conditions but artisanal mining has declined and is likely to continue due to dwindling deposits and the expansion of industrial mining. Avenues to improve household-income generating activities could mitigate the resource curse. Policy makers should think of avenues by which economic diversification can be enhanced in mining communities. Perhaps by increasing the level of the DACDF (a quarter of the 6.5% export tax on diamonds) could be used to support micro credits, loans and creating income generating activities at

the mining community level. The Mines and Mineral Act 2009 has important instruments that could contribute to sustainable development in Sierra Leone in general and mining communities in particular, if it is implemented faithfully. Yet, in its 70-year history, more particularly since the 1980s, diamond exploitation has not benefited the majority of Sierra Leoneans from socioeconomic and environmental perspectives, and the weak capacity of the state to regulate diamond exploitations and share its benefits equitably has been a major causative factor. This dissertation has shown that a number of governance issues need to be resolved in order to mitigate the resource curse. Strengthen governance at different levels (local, national, and global) are pivotal in addressing the resource curse. Furthermore, equity in revenue distribution, oversights in the management of diamond revenues, and community empowerment are needed so that diamonds can foster socioeconomic development rather than perpetrating conflict-ridden underdevelopment.

Appendix 1: Household Questionnaire

DIAMONDS, A RESOURCE BLESSING OR CURSE? THE CASE OF KONO DISTRICT IN SIERRA LEONE

Section A: Location and Identification Information

Enumeration Area	A1
Chiefdom	A2
Village/Town	A3
Household Number	A4

Interviewer Information

Date	Interviewer	Checked	Coded
A5			

Household Demographics

Number of People in HH	
Male	A6
Female	A7
Total	A8

[Note Schedules A & B is applicable to all respondents]

B. General and Demographic Information

Household Characteristics								
#	B1. List of all Household Members	B2. Sex M, F	B3 Age Yrs	B4 Relation to H of Household	B5 Marital status	B6 Educ. Level	Economic activity	
							B7 Primary income	B8 Secondary income
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Relation to H of H

1. Self
2. Spouse
3. Son/daughter
4. Brother/sister
5. Mother/father
6. Grandfather/mother
7. Granddaughter/son
8. Aunt/uncle
9. Cousin
10. Mother/father-in-law
11. Daughter/son-in-law
12. Nephew/niece
13. Other (specify)

Marital Status

For adults

1. Married
2. Single
3. Divorce
4. Widowed
5. Separated

<p>Educational Level</p> <ol style="list-style-type: none"> 1. None 2. Primary Incomplete 3. Primary Complete 4. Secondary Incomplete 5. Secondary Complete 6. Vocational/Tech 7. University Degree 8. Currently in school 	<p>Economic Activity: Primary/Secondary Sources of Income</p> <p>1=Unable (too young, disabled, sick); 2=Unemployed; 3=Diamond Mining 4=Farming 5=Agric casual labor 6=Other paid labor; 7=Diamond Dealer 8=Skilled trade/artisan; 9=Medium to large business (shop/grocery); 10 =Small trade (firewood, vegetables); 11=Formal wages (inc. salary); 13=Receiving college or vocational education; 14=retired/pensioner 88 = Other (Specify</p>
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Address questions to head of household, HoH, but if Head of Household (HoH) is not present; interview any adult member of the household, HH. Enter responses to questions B1-B7 in the table above.

B1. What is your name sir/madam?

B2 [Enumerator: Please record sex of respondent and each HH member in the table]

B3. How old are you (complete years)

B4. What is your relation to the HoH? [Use code below table]

B5. What is your marital status? [Applicable to HH members 12 years or older]

B6. What is your highest level of education? [Use codes below table]

B7 What is a) your primary source of income? [Select one from Economic Activity codes]

B8. b) your secondary source of income? [Select one from Economic Activity codes]

B9. Were you born in this village/town? If yes, on B9 go to B13.

1. Yes 2. No

B9:

B10. If born elsewhere, where were you born?

B11. What year did you move to this village/town?

B12. Why did you move to this village/town? [Enter village/town and District]

B13. What is your nationality?

1. Sierra Leonean 2. Guinean 3. Gambian 4. Nigerian 5. Liberian 6. Lebanese
7. Others (Specify)

B13:

B14. What is your ethnicity?

1. Kono 2. Mende 3. Temne 4. Limba 5. Fula 6. Madingo 7. Krio 8. Other (Specify)

B14:

B15. What is your religion?

1. Christian 2. Muslim 3. Traditional 4. None 5. Others (Specify)

B15:

C. Illicit Diamond Mining and Marketing [To diamond chiefdoms only]

C1. Are you aware that there are policies/laws for diamond mining? [If no, go to C4]

1. Yes 2. No 3. Don't know

C1:

C2. How do you rate the effectiveness of local mining rules in your community?

1. Very effective 2. Effective 3. Average 4. Ineffective 5. Very ineffective

C2:

C3. How do you rate the effective of national mining rules in your community?

1. Very effective 2 Effective 3. Average 4 Ineffective 5. Very ineffective

C3:

C4. Have you heard about illicit diamond mining in Kono? [If no, go to C17]

1. Yes 2. No 3. Don't know

C4:

C5. Do you consider illicit mining a problem? [If yes, go to C7]

C5:

1. Yes 2. No 3. Don't know

C6. If no, have you ever benefited from illicit mining?

1. Yes 2. No 3. Don't know

C6:

C7. If yes to C5, how big a problem is illicit diamond mining?

1. very big 2. big 3. Moderate 4. Don't know

C7:

C8. Which of these is the major cause of illicit diamond mining?

1. Mines monitors are not enough
2. The formal mining procedure is not implemented fairly
3. Diamonds are scattered all over the district
4. Mining licenses are expensive

5. Other (specify.....)

C8:

C9. Is illicit mining in Kono greater in remote places than in places close to city/towns?

[If no, go to C11]

1. Yes 2. No 3. Don't Know

C9:

C10. If so, why?

1. Very few mines monitors to cover mines
2. Mines monitors lack logistics to venture into remote places.
3. There is no monitoring of remote areas
4. Illicit miners do have the support of traditional authorities.
5. Others (Specify)

C10:

C11. It is believed that diamonds are scattered all over central and western parts of Kono. Does the spatial dispersal of diamonds result in increasing illicit mining?

1. Yes 2. No 3. Don't Know

C11:

C12. How do you rate illicit mining?

A. Before the war: 1. High 2. Moderate 3. Low

C12a:

B. During the war: 1. High 2. Moderate 3. Low

C12b:

C. Currently: 1. High 2. Moderate 3. Low

C12c:

C13. Over the past 5 years, how would you characterize the trend in illicit diamond mining? If 1 (increased) in C13 go to C15

C13:

1. It has increased 2. It has decreased 3. It has remained the same 4. I don't know

- C14. If it has decreased, what is the main reason? [Answer C14 then go to c16]
1. Better monitoring of mines
 2. Procedure for formal mining is cheaper than before
 3. Fair treatment of potential miners in obtaining mining leases
 4. Growth in mining cooperatives
 5. Diggers have better conditions of service in mining.
 6. Others (Specify...)

C14:

- C15. If it has increased, what is the main reason?
1. Poor mines monitoring
 2. It is more expensive to engage in formal mining
 3. There is preferential treatment in obtaining license
 4. Other (Specify)

C15:

- C16. Which of these is the major cause of illicit trade in diamonds?
1. Country's border is not policed
 2. Better market price in other countries
 3. Informal social networks
 4. Ease of transfer to international market
 5. Corruption.
 6. High license fees
 7. Other (Specify.....)

C16:

- C17. How can formal diamond mining be increased?

1. Lower license fees
2. Applied mining procedures fairly
3. Equity in land allocation for mining
4. Reduce favoritism: patron-client connections

C17:

- C18. What is the most important measure that can increase formal diamond trade?
1. Better protection of national border
 2. Better incentives for mines monitors.
 3. Higher prices for local purchase
 4. Reducing the 'chain of middle men'.
 5. Bringing international buyers direct to miners
 6. More trade liberalization
 7. Other (Specify)

C18:

D. Level of Socio-Economic Disparity

- D1. Do you know about the management structure of the diamond chain? [If no, go to D6]

D1:

1. Yes
2. No
3. Don't know

- D2. What do you feel about the patron-client network of diamond production?

1. Very adequate
2. Adequate
3. Neutral
4. Inadequate
5. Very inadequate

D3. What do you think about how 'winnings' of diamond production are distributed?
[If 1 or 2 in D3 go to D5]

1. Very adequate 2. Adequate 3. Average 4. Inadequate 5. Very inadequate

D3:

D4. What is the main reason for the inadequacy?

1. Diggers do not receive much money 2. Workers are not well-paid
3. No extra financial benefits available 4. Supporters exploit diggers
5. Diamond dealers exploit diggers
6. Other (Specify.....)

D4:

D5. What is the main reason for the adequacy?

1. Diggers receive much money 2. Workers are well-paid
3. Extra financial benefits
4. Supporters give fair share to diggers 5. Diamond dealers pay fair amount to diggers
6. Other (Specify)

D5:

*D6. Name two major economic opportunities available to you.

1. Diamond mining 2. Diamond marketing 3. cash crop farming
4. Retail trade 5. Forest 6. Rice farming 7. other staples
8. Other (Specify.....)

D6:

D7. How much did you make from all mining related incomes
(including wages) last year - 2007?

1. Above 10 million leones. 2. 6 to 10 million leones.
3. 1 to 5 million leones 4. ½ million to 1million.
5. 1/10 million to ½ million. 6. Below 1/10 million leones.
7. Other (Specify.....)

D7:

*D8. How much income did you obtained from your other economic activities?

1. 1. Above 10 million leones. 2. 6 to 10 million leones.
3. 1 to 5 million leones 4. ½ million to 1 million
5. 1/10 million to ½ million. 6. Below 1/10 million leones. 7. Other (Specify.....)

D8:

D9. How can you rate your household diamond productivity

A) before 1991, B) 1991 to 2001 C) since 2002?

Rate	Before 1991	1991 to 2001	Since 2001
1. High productivity			
2. Medium productivity			
3. Low productivity			

4. Not engaged in mining- displaced

D10. How did you gain access to land for diamond mining?

1. Lease from chief/headman	
2. Customary Right	
3. Inherited from parents	
4. Business agreement with landholder	
5. Permission from relative/friend	
6. Other (Specify)	

D11. Can women gain access to land for diamond mining? [If no go to D13)

1. Yes 2 No 3. Don't Know

D11:

D12. Do women have equal access to good quality land as the men do?

1. Yes 2. No 3. Don't know

D12:

*D13. How do you gain access to land for agriculture?

1. Lease from chief/headman	
2. Customary Right	
3. Inherited from parents	
4. Rent	

***D14. How many landholdings of each of the following types does your HH own?
What is the estimated size of each?**

	No. of Plots	Estimated Size (acres)
Mining plots		
Farmland		
Land for tree plantation		

**D15. Do you have enough land for mining activities? 1. Yes 2. No
3. Don't Know**

D15:

D16. How can you rate recent productivity level of your mining land?

1. Very rich 2. Rich 3. Average 4. Poor 5. Very poor

D16:

***D17 Do you have enough land to farm and feed your family?**

1. Yes 2. No 3. Don't Know

D17:

***D18. Are you satisfied with the quality of land you have for agriculture**

1. Yes 2. No 3. Don't Know

D18:

**D19. Have you apportioned part of your mining plot to someone else?
[If no, go to D22]**

1. Yes 2. No 3. Don't Know

D19:

D20. If yes, what was the main reason for apportioning part of your mining land?

1. Social obligations 2. Repayment of debt 3. To have capital to mine
4. Inadequate labor to mine 5. Inadequate tools for mining 6. Other(Specify)

D20:

D21. What is the nature of the agreement with the other person?

***D22. Have you apportioned part of your farming land to someone else for farming?
[If no, go to D24]**

1. Yes 2. No 3. Don't Know

D22:

***D23. If yes, why did you apportion part of your farming land?**

D23:

***D24. Do you have access to firewood, medical plants, timber?**
[If no, go to D30]

1. Yes 2. No 3. Don't Know

D24:

***D25. What do you use firewood, medicinal plants, and timber for?**

(a) household consumption only (b) sell all of it (c) sell some of it

D25:

***D26. Has there been an increase in access to forest products over the past five years?**
[If no, in D26 go to D28]

1. Yes 2. No 3. Don't Know

D26:

*** D27. If yes, what is the main reason?**

1. Permission to access forests is obtained easily
2. Forest growth over the past 10 years
3. Growth in access routes to forest
4. Other (Specify)

D27:

***D28 If no, why?**

1. It is very difficult to obtain permission to access forest
2. Very little forest exists in this community
3. Very few access routes to forest
4. There is no forest in my town/village
5. Other (Specify)

D28:

***D29. Has there been an increase in the supply of wood?**

1. Yes 2. No 3. Don't know

D29:

D 30. How do you gain access to labor for mining?

1. Extended family members
2. Friends
3. Social group
4. Hire laborers
- 5 Other (Specify.....).

D30:

D31. What is your major source of capital for mining?

1. Loans through banks
2. Loans through NGOs.
3. From family members
4. from cooperative society
5. Other (Specify.....)

D31:

***D32. How do you characterize the overall economic impact of mining to your household?**

1. Generally positive
2. Generally negative
3. No impact
4. Don't know

D32:

D 33. Has diamond mining increased your household income

[If no, go to D35]

D33:

1. Yes 2. No 3. Don't know

D 34. If yes, what is the main source of this income?

1. Wages from mining labor 2. Direct diamond sales
2. 3. Business serving mining industry 4. Remittances from miners
3. 5. Other (Specify)

D34:

D 35. Has diamond mining increased your social status/well-being?

[If no, in D35 go to D 37]

1. Yes 2. No 3. Don't know

D35:

D36. If yes, what is the main source of income?

- 1 Wages from mining labor 2. Direct diamond sales
3. Business serving mining industry 4. Remittances from miners
5. Other (Specify)

D36:

D37. Do you consider diamond mining as a blessing or a curse to your household?

1. A Blessing 2. A curse 3. Neither

D37:

E Conflicts over natural resources [E1 to E6 applicable to all respondents]

E 1. In your opinion, what was the major cause of the civil war?

1. Political disagreements or intolerance 2. Fight for diamonds 3. Ethnic strife 4.
Foreigner incursion 5. Other (Specify)

E1:

E2. What role did diamonds play in the war?

1. They caused it 2. They prolonged the war 3. They had no role 4. Don't know

E2:

E3. Do you consider diamond mining as a blessing or a curse to your community?

1. A blessing 2. A curse 3. Don't know

E3:

E4. Do you consider diamond mining as a blessing or a curse to the country?

1. A blessing 2. A curse 3. Don't know E4:

E5. Are there conflicts over land in your community? [If no, go to E12]

1. Yes 2. No 3. Don't Know E5:

E6. Are they related to land for mining? [If no to E6 go to E8]

1. Yes 2. No 3. Don't Know E6:

E7. How can you rate the conflict over mining?

1. Very intense 2. Intense 3. Average 4. Mild 5. Very mild

E7:

*E8. Are you aware of conflict related to land for agriculture? [If no to E8 go to E10]

1. Yes 2. No 3. Don't Know E8;

*E9. If yes, how do you rate the conflict over agriculture land in your community?

1. Very intense 2. Intense 3. Average 4. Mild 5. Very mild

E9:

*E10. Are there conflict between miners and farmers in your community?
[If no, in E10 go to E12]

1. Yes 2. No 3. Don't Know E10:

E11 If yes, what is the main source of conflict? [If no, proceed to E17]

1. Compensation of farming land converted to mining
2. 2. Destruction of farmland by
3. overburden 3. Border dispute 4. Other (Specify.....).

E11:

**E12. Is corporate mining being done in your community?
[If no, go to E24]

1. Yes 2. No 3. Don't Know E12:

E13. If yes, is there conflict between mining communities and mining companies?

1. Yes 2. No 3. Don't know E13:

E14. What is the biggest cause conflict between mining communities and mining companies?

1. Access to land for diamonds
2. Non-compliance with EIA report-resettlement of affected communities.
3. Inadequate compensation for land
4. Communities not involved in corporate mining agreements
5. Blast mining by companies
6. Communities' local livelihood activities (especially agriculture) are adversely affected.
7. Other (Specify....)

E14:

E15. Since the introduction of corporate mining in your community, has there been an increase in conflict over mining?

[If no, go to E17]

1. Yes
2. No
3. Don't Know

E15:

E16. If yes, why? [If yes in E16 go to E18]

1. Small scale miners have been deprived of mining land
2. Local authorities favor corporate mining rather than small scale mining
3. Inadequate compensation for land allocated to corporate mining
4. Companies have not built houses for displaced persons
5. Blast mining results in discomfort for communities
6. Companies treat workers badly
6. Other (Specify)

E16:

E17. If no, why?

1. Increase in employment for small miners
2. Adequate compensation for land allocated to corporate mining
3. Companies provide standard houses for those displaced by corporate mining.
4. Mining workers have very good conditions of service.
5. Communities benefit from infrastructure development done by mining companies

E17:

E18. Which authority is primarily responsible for land lease agreement for corporate mining?

1. Central government
2. Local government
3. Traditional authorities.
4. Civil societies.

E18:

E19. Which authority has power to expropriate land from artisanal miners and allocate to corporate miners?

1. National government
2. Local government
3. Traditional authorities
4. Cooperatives.

E19:

E20. Are people compensated for land mined by companies?
[If no, go to E23]

1. Yes 2. No 3. Don't Know

E20:

E21. If yes, who determines the amount for compensation?

1. The national government 2. Local government
3. Traditional authorities 4. Companies
5. Mining communities 6. Other (Specify.....).

E21:

E22. Do you think that such compensation is

E22:

1. Very fair 2. Fair 3. Average 4. Unfair 5. Very unfair

E23. What do you consider the most appropriate measure to resolve conflicts between mining communities and mining companies?

1. Adequate compensation to land owners
2. Community members should be involved in lease agreements procedures
3. EIA should involve community members
4. Mining workers should be treated fairly.
5. Mining companies should build standard houses for displaced persons
6. Mining companies should engage in meaningful infrastructure development 7.
Other (Specify)

E23:

E24. Is there conflict between mining communities and traditional authorities?
[If no, go to E27]

1. Yes 2. No 3. Don't Know

E24:

E25. What is the biggest cause of conflict between mining communities and traditional authorities?

1. Inaccessibility of lease agreement to communities
2. Inaccessibility of Environmental Impact Assessment Report to communities
3. 3. Reluctance of local authorities to sign artisanal mining licenses
4. Denial of access to land for farming activities
5. 5. Corruption by local leaders 6. Other (Specify)

E25:

E26. What do you consider the most appropriate measure to resolve conflicts between mining communities and traditional authorities?

E26:

E27. Are you aware of conflict between mining gangs? [If no, go to E29]

E27:

1. Yes 2. No 3. Don't Know

E28. If yes, what is the major source of conflict?

1. Sharing winnings. 2. Sharing gravels 3. plot border dispute
4. Rivalry for supporters 5. Other (Specify.....).

E28:

E29. Are you aware of conflict between diamond diggers and diamond miners?

1. Yes 2. No 3. Don't Know

E29:

E30. If yes, what is the major source of conflict between diggers and diamond miners?

1. Miners may not share winnings adequately
2. Diggers may sell diamonds to miners that did not support them
3. Miners may not be satisfied with output
4. Other (Specify.....).

E30:

F Environmental Degradation (to question head of household)

*F1. Do you think there has been environmental degradation in your community over the past 10 years? [If no, go to F11]

1. Yes 2. No 3. Don't Know

F1:

*F2. If so, what is the biggest environmental problem in your area?

1. Deforestation 2. Un-reclaimed pit 3. Soil erosion 4. Flooding 5 Landslides 6. Pollution of streams 7. Improper drainage 8. Other (Specify)

F2:

*F3. What is the biggest proximate cause of land cover change(s) in your community?

1. River dredging 2. Open cast dredging 3. Pit mining 4. Artisanal mining 5. Kimberlite mining 6. Farming 7. Lumbering 8. Other (Specify)

F3:

F4. What is the biggest underlying cause of land cover change in your community?

1. Inadequate mining regulations 2. Customary land tenure 3. Population growth 4. Poverty 5. Charcoal production 6. Pit mining 7. Farming 8. Lumbering 9. Fire wood cutting 10. Other (Specify)

F4:

F5. Do you think there is a linkage between diamond mining and environmental degradation?

1. Yes 2. No 3. Don't Know

F5:

F6. If yes, how does diamond mining negatively affect the environment?
(Check all that apply).

1. Pollutes water 2. Reduces land cover 3. Pollutes air
4. Triggers flooding 5. Disrupts stream flows
6. Reduces soil fertility and productivity
7. Reduces water availability 8. Other (Specify)

F6:

F7. Which of the natural resources has been most affected?

1. Forest cover 2. Land 3. Inland Swamps 4. Rivers/Streams

F7:

F8. To what extent has diamond mining/farming contributed to environmental degradation?

F8:

1. To a large extent 2. To a small extent 3. To no extent

F9. Has diamond mining contributed to the degradation of farmlands in your community?

1. Yes 2. No 3. Don't Know

F9:

F10. If yes, which of the farming activities have been most affected?

1. Cash crop farming 2. Upland farming 3. Swamp rice farming
4. Vegetable gardening

F10:

F11. Are the mining plots still useful for farming after mining?

1. Yes 2. No 3. Don't Know

F11:

F12. If no, why?

1. Creation of mine out pits 2. Soil infertility due to removal of surface soil
3. Erosion due to deforestation 4. Desiccation of the land
5. Other (Specify)

F12:

F13. Does current environmental condition affects your livelihood strategies?
[If no, go to f16]

1. Yes 2. No 3. Don't Know

F13:

F14. If yes, how does it affect your livelihoods?

F15. How do you adapt your livelihood strategies?

F16. How can you rate your household agricultural productivity?

A) Before 1991, B) 1991 to 2001 B) since 2002

Rate	Before 1991	1991 to 2001	Since 2002
1. High productivity			
2. Medium productivity			
3. Low productivity			

F 17. What is the state of forest cover in your community?

State	10 years ago	5 years ago	Currently
1. Good			
2. Moderate			
3. Poor			

F 18. What is the trend of forest cover in your community?

Trend	10 years ago	5 years ago	Currently
1. Increased			
2. Decreased			
3. Remain the same			

F19. Do you think anybody is to be blamed for environmental degradation in Kono? [If no, go to F21]

F19:

1. Yes 2. No 3. Don't know

F20. If yes, who should be blamed for environmental degradation in Kono?

1. Illicit diamond miners 2 Artisanal diamond miners 3. Local people
4. Foreigners 5. Ministry of Mines 6 Local political head
7. Diamond companies 8. Other (Specify)

F20:

F21. How can the environmental conditions in Kono be improved?

1. Reclaim mine-out areas 2. Control illicit mining 3. Reforestation
4. Government should allow only kimberlite mining
5. Enforce environmental rules to control deforestation.
- 6 Intensive farming practices. 7 Other (Specify)

F21:

F22. What can be done to improve the socio-economic conditions of mining communities in Kono?

1. Provide alternative job opportunities
2. Government should enforce conditions of service for mine workers
3. Better financial and logistic support for cooperatives
4. Companies should be mandated to engage in meaningful development projects
5. Bring buyers closer to miners
6. Educate miners about the actual value of diamonds. 7 Other (Specify)

F22:

F23. What can be done to improve the socio-economic conditions of agricultural communities?

1. Provide bulk transportation facilities at reasonable cost
2. Provide agricultural extension service
3. Provide farming implements to farmers
4. Improve on mechanized farming
5. Development agro-based industries
6. Provide credit facilities that can be accessible to most farmers
7. Other (Specify)

F23:

G. Livelihood and Household Gender Relations

[Questions directly related to mining are not applicable to agric. Areas]

G1. Have there been changes in your livelihood strategies over the past five years?

1. Yes 2. No 3. Don't Know

G1:

G2. How would you characterize the overall impact of mining to your livelihood?

1. Generally positive 2. Generally negative 3. No impact 4. Don't know

G2:

G3. What was the primary livelihood in your village before mining was liberalized?

[liberalize – open to all. This includes start of corporate mining]

1. Farming 2. Fishing 3. Wage employment 4. Lumbering
5. Wood cutting 6. Charcoal production 7 Other (Specify)

G3:

G4. What is the primary livelihood in your village now?

1. Farming 2. Fishing 3. Wage employment
4. Diamond mining 5. Lumbering 6. Wood cutting
7. Charcoal production 8 Other (Specify)

G4:

G5. If there is a change between the two, what role has the liberalization of mining played?

1. A major role 2. A moderate role
3. Little or no role 4. Don't know

G5:

G6. Are there any livelihoods that were there before mining was liberalized but are no longer there or have nearly been wiped out?
[If no, go to G8]

1. Yes 2 No 3 Don't know

G6:

G7. If yes, what are these livelihoods? List them

1. Fishing 2. Swamp rice farming 3. Hunting
4 Cash crop production 5. Gardening 6. small-scale diamond mining
7 Upland farming 8. Other (Specify)

G7:

G8. What was the main occupation for men before mining was liberalized in your community?

1. Swamp-rice farming 2. Upland farming
2. 3. Fishing 4. Hunting 5. Cash crop production
3. 6. Gardening 7. Other (Specify)

G8:

G9. Are women involved in the diamond industry? [If no, go to G11]

1. Yes 2. No 3. Don't know

G9:

G10. What roles do they play?

1. Supporters 2. Diamond Washers 3. *Over kickers*
2. 4. Diggers 5. Miners 6. Dealers 7. Other (Specify)

G10:

G11. Do women have more income than before the liberalization of mining?

1. Yes 2. No 3. No change 4. Don't know

G11:

G12. Have diamonds resulted in increase in economic autonomy among women?

1. Yes 2. No 3. Don't know

G12:

G13. What is the trend in the level of conflict within the household since mining was liberalized?

1. Increased 2. Decreased 3. No change 4. Don't know

G13:

Appendix 2: Accuracy Assessment Tables

Table 1: Correlation coefficients of TM bands 1986

Correlation coefficient for Kono District TM 1986.						
	Band 1	Band 2	Band 3	Band 4	Band 5	Band 7
Band 1	1					
Band 2	0.6584	1				
Band 3	0.6049	0.8216	1			
Band 4	-0.1061	-0.0953	-0.3202	1		
Band 5	0.3988	0.5760	0.6874	0.0180	1	
Band 7	0.3254	0.4788	0.6733	-0.3497	0.7227	1

Table 2: Correlation coefficients of TM bands 1991

Correlation coefficient for Kono District TM 1991.						
	Band 1	Band 2	Band 3	Band 4	Band 5	Band 7
Band 1	1					
Band 2	0.7866	1				
Band 3	0.5914	0.7800	1			
Band 4	0.0862	0.0287	-0.3389	1		
Band 5	0.3482	0.5420	0.6646	-0.0241	1	
Band 7	0.2728	0.3891	0.5563	-0.2133	0.6339	1

Table 3: Correlation coefficients of TM bands 2002

Correlation coefficient for Kono District TM 2002.						
	Band 1	Band 2	Band 3	Band 4	Band 5	Band 7
Band 1	1					
Band 2	0.7290	1				
Band 3	0.6381	0.8031	1			
Band 4	-0.1704	-0.1539	-0.4565	1		
Band 5	0.3375	0.4345	0.6073	-0.1101	1	
Band 7	0.3296	0.3858	0.5502	-0.3532	0.5826	1

Table 4: Correlation coefficients of TM bands 2007

Correlation coefficient for Kono District TM 2007.						
	Band 1	Band 2	Band 3	Band 4	Band 5	Band 7
Band 1	1					
Band 2	0.7981	1				
Band 3	0.6333	0.8234	1			
Band 4	-0.1383	-0.2139	-0.5135	1		
Band 5	0.3269	0.5467	0.6954	-0.1432	1	
Band 7	0.4136	0.5756	0.6398	-0.1744	0.7255	1

Table 5: Classification accuracy assessment of TM 1986 image

Class	Grass	Agriculture	Forest	Water	Urban	Bare	Row total
Grass	46	0	4	0	0	0	50
Agriculture	3	45	2	0	0	0	50
Forest	13	0	67	0	0	0	80
Water	5	1	0	44	0	0	50
Urban	0	0	0	0	46	4	50
Bare	11	0	0	0	1	38	50
Column total	78	46	73	44	47	42	330

Overall accuracy = 86.67%.

Overall Kappa statistics = 0.8390

Producer's accuracy (Omission error)

Grass = 58.97%

Agriculture = 97.83%

Forest = 91.78%

Water = 100%

Urban/settlement = 97.87%

Bare ground = 90.48%

User's accuracy (commission error)

Grass = 92%

Agriculture = 90%

Forest = 83.75%

Water = 88%

Urban/settlement = 92%

Bare ground = 76%

Table 6: Classification accuracy assessment of TM 1991 image

Class	Grass	Agriculture	Forest	Water	Urban	Bare	Row total
Grass	48	0	0	0	0	2	50
Agriculture	0	45	5	0	0	0	50
Forest	12	6	62	0	0	0	80
Water	8	0	0	38	0	4	50
Urban	2	0	0	0	42	6	50
Bare	0	0	2	0	4	44	50
Column total	70	51	69	38	46	56	330

Overall accuracy = 84.55%.

Overall Kappa statistics = 0.8137

Producer's accuracy (Omission error)

Grass = 68.57%

Agriculture = 88.24%

Forest = 89.86%

Water = 100%

Urban/settlement = 91.3%

Bare ground = 78.57%

User's accuracy (commission error)

Grass = 96%

Agriculture = 90%

Forest = 77.5%

Water = 76%

Urban/settlement = 84%

Bare ground = 88%

Table 7: Classification accuracy assessment of TM 2002 image

Class	Grass	Agriculture	Forest	Water	Urban	Bare	Row total
Grass	50	0	0	0	0	0	50
Agriculture	0	41	1	0	0	8	50
Forest	7	1	71	0	0	1	80
Water	0	0	0	50	0	0	50
Urban	2	1	4	0	33	10	50
Bare	7	0	4	0	1	38	50
Column total	66	43	80	50	34	57	330

Overall accuracy = 85.76%.

Overall Kappa statistics = 0.8277

Producer's accuracy (Omission error)

Grass = 75.76%%

Agriculture = 95.35%

Forest = 88.75%

Water = 100%

Urban/settlement = 97.06%

Bare ground = 66.67%

User's accuracy (commission error)

Grass = 100%

Agriculture = 82%

Forest = 88.75%

Water = 100%

Urban/settlement = 66%

Bare ground = 76%

Table 8: Classification accuracy assessment of TM 2007 image

Class	Grass	Agriculture	Forest	Water	Urban	Bare	Row total
Grass	47	0	1	0	0	2	50
Agriculture	1	42	4	0	0	3	50
Forest	12	0	68	0	0	0	80
Water	3	0	0	42	0	5	50
Urban	1	0	1	0	37	11	50
Bare	3	0	1	0	1	45	50
Column total	67	42	75	42	38	66	330

Overall accuracy = 85.15%.

Overall Kappa statistics = 0.8206

Producer's accuracy (Omission error)

Grass = 70.15%

Agriculture = 100%

Forest = 90.67%

Water = 100%

Urban/settlement = 97.37%

Bare ground = 68.18%

User's accuracy (commission error)

Grass = 94%

Agriculture = 84%

Forest = 85%

Water = 84%

Urban/settlement = 74%

Bare ground = 90%

Appendix 3

INTERVIEW SCHEDULES

Assistant Director of the Ministry of Mineral Resources

Illegal diamond mining and marketing

1. What was the state of illegal mining prior to the war in 1991?
2. Do you think attitudes to illegal mining have changed in the post-war era? How? Why?
3. What can you say about unlicensed mining that is practiced in Kono?
4. Which types of people tend to mine without licenses? Why is this?
5. What do illegal miners do with their diamonds?
6. In your experience, what precludes people from mining legally? (apart from being able to pay the license).
7. Do you think it will be easier for more people to mine legally if the license process was changed? For instance, if they could pay for their license in monthly installments (or if there were mining licenses for those who want to mine alone).
8. I have heard that the number of Sierra Leone dealers has been on the increase in recent years? What can you say about the relationship between the national and non-national dealers in Kono?
9. In your opinion, is there more of less legal dealing done than illegal dealing? In what proportions (reasonable estimate).
10. Would you say that there has been a change in attitudes towards smuggling since the end of the war? How? Why?
11. In spite of the Kimberley Process Certification Scheme (KPCS) illicit diamonds are still smuggle out of the country and there are reports that some get into the mainstream of legal export? Why is this so?
12. How can KPCS work more effectively to reduce significantly the quantity of illicit diamonds being marketed?
13. What action is the government taking to make smuggling a less viable option?

14. What are the challenges faced by government to eliminate illicit mining and marketing of diamonds?
15. At each stage of the legal diamond chain, there are dominant ethnicities that operate at that level? What is the predominant ethnicity among the diggers, the license-holders, the dealers, the exporters? What about the illegal diamond chain?
16. I understand that different forms of corruption prevail in the diamond mining industry. I have heard that diggers do steal diamonds from their gang; people who are in positions of power are paid off to use their position to influence a decision or to take certain action. Do you agree that I understand these things quite well? What other possible scenarios might exist in Kono? How do you see it?
17. Of the various scenarios which is the most debilitating to local wellbeing?
18. What is the ministry doing to minimize corruption in the industry?
19. Have attitudes to corruption changed since the end of the war? How? Why?
20. What remarkable gains have been made in minimizing corruption? What evidence is there of this?
21. From my interviews, it is clear that those individuals working in the diamond industry are reliant upon networks of patronage? What can you tell me about these networks? How have they changed since the end of the war? How have they emerged? How would you characterize the relationships within these networks?
22. Some people maintain that diamond exploitation caused and fuelled the war. Do you agree with this? Why?
23. What can you tell me about the unlicensed mining that goes on here in Kono?
 - How many miners and what % of them are illegal?
 - What area of land in Kono is mined legally vs. illegally?
 - Which types of people tend to mine without licenses? Why is this?
 - How do their mining practices differ from those of licensed miners?
i.e. do illegal miners work in gangs or alone? Why is this? Where/when do they mine?
What do illegal miners do with their diamonds?

24. I understand that there are conflicts between Kono communities and mining companies. What do you think is the major cause of conflict?
25. I understand that there are conflicts between Kono communities and government. What do you think are the major cause of conflict?
26. I understand that there are conflicts between Kono communities and their traditional authorities? What do you think is the major cause of conflict?
27. In your opinion, what would help diamonds becoming more of a resource blessing? (more beneficial to the country and people).

Mines Monitoring Officer

Part of my objective is to understand the challenges faced by government in making diamonds more of a blessing in Sierra Leone, but especially in Kono. Therefore I want to understand people's incentives for operating outside the legal channel.

1. What have been your various roles in the mining industry?
2. What can you tell me about how the industry has changed since you got involved in it? In what ways is the artisanal mining industry different today to how it was before the war?
3. What do you think people feel about the current operations of the mining industry?
4. Do you think attitudes to illegal mining have changed in post-war era? How Why?
5. What can you tell me about the unlicensed mining that goes on here in Kono?
 - a. How many miners and what % of them are illegal?
 - b. What area of land in Kono is mined legally vs. illegally?
 - c. Which types of people tend to mine without licenses? Why is this?
 - d. How do their mining practices differ from those of licensed miners? i.e. do illegal miners work in gangs or alone? Why is this? Where/when do they mine?

What do illegal miners do with their diamonds?

6. In your experience, what precludes people from mining legally? (apart from being able to pay the license).
7. Do you think it will be easier for more people to mine legally if the license process was changed? For instance, if they could pay for their license in monthly installments (or if there were mining licenses for those who want to mine alone).
8. I have heard that the number of Sierra Leone dealers has been on the increase in recent years? What can you say about the relationship between the national and non-national dealers in Kono?
9. In your opinion, is there more of less legal dealing done than illegal dealing? In what proportions (reasonable estimate).
10. Would you say that there has been a change in attitudes towards smuggling since the end of the war? How? Why?
11. In spite of the Kimberley Process Certification Scheme (KPCS) illicit diamonds are still smuggle out of the country and there are reports that some get into the mainstream of legal export? Why is this so?
12. How can KPCS work more effectively to reduce significantly the quantity of illicit diamonds being marketed?
13. What action is the government taking to make smuggling a less viable option?
14. What are the challenges faced by government to eliminate illicit mining and marketing of diamonds?
15. At each stage of the legal diamond chain, there are dominant ethnicities that operate at that level? What is the predominant ethnicity among the diggers, the license-holders, the dealers, the exporters? What about the illegal diamond chain?
16. In your opinion, where is the biggest potential for corruption in Kono District?
17. I have heard that diggers do steal diamonds from their gang; people who are in positions of power are paid off to use their position to influence a decision or to take certain action. What's your opinion about such allegations? What other possible scenarios might exist in Kono? How do you see it?
18. Of the various scenarios, which do you think is most debilitating to local well being?

19. What can you tell me about the types of collusion and intimidation that exist in the diamond industry? What are the impacts of these on wider society?
20. Have attitudes to corruption changed since the end of the war? How? Why?
21. What gains have been made in minimizing corruption? What evidence is there of this?
22. What types of corruption would be most difficult to minimize? Why?
23. Some people maintain that diamonds were a factor in causing and fuelling the war? Do you agree with this? Why?
24. What do you know about the diamondiferous area community development funds? What benefits have you seen come from these?

Diamond Dealers

1. How did you get into the diamond industry?
2. How did you become a diamond dealer?
3. Had a family member been involved in the diamond industry in the past? What was their role?
4. Who else in your family is currently involved in the diamond industry?
5. What has helped you most in developing the skills to become a dealer?
6. Do you have any other roles in the diamond industry apart from being a dealer? If so, what are they?
7. How do dealers tend to get information about the politics of the industry and the climate for investment?
8. Are you involved in any formal or informal association, like dealer's association? What benefits does membership bring you?
9. What can you tell me about your relationship with other dealers? I made to understand that there is an 'economic war' between Lebanese and Sierra Leonean dealers. What do you think about this? Why does this 'war' exist?
10. Is there competition or cooperation between Lebanese and Sierra Leonean dealers? What about between the Lebanese and the Marakas? What about the Sierra Leoneans and the Marakas?
11. What strategies do dealers use to attract miners to come and sell to them?

12. What can dealers do to maintain good relationships with their buyers? Do dealers tend to sell to just one person or many?
13. If you are comfortable telling me, how much might you buy a 1 carat gem? How much would you sell it for? Do you know its worth on the international markets? -
 _____ digger _____ license holder _____ supporter _____ dealer
 _____ international buyer
14. From your perspective, at which point of the supply chain is the biggest profit made? Why is this?
15. What is the role of coaxers in the diamond industry? What do they do? Whose interests do they serve best?
16. I am made to understand that coaxers are mostly Fullas and Maraka, and not Sierra Leoneans. Why is this?
17. I have been told about the 'Opuneye' system. What function does the 'Opuneye' play in the diamond industry? What are its advantages and disadvantages?
18. How can an illegal dealer sell diamonds into the legal market? What must he/she do?
19. Who do you feel is more likely to smuggle diamonds: an illegal miner, an illegal digger, and illegal dealer (for example, a member of the Opuneye), or a businessman in need of hard currency?
20. In your opinion, what kind of relationship does the Lebanese dealing community have with the chiefs?
21. How important do you feel it is to keep favor with the chiefs?
22. What about the government? What kind of relationship does the dealing community have with local government? What kinds of things must dealers do to keep their favor?
23. To your knowledge, who are the external investors who are trying to get involved in the Kono diamond industry?
24. What protocols must they go through to get involved in the highly competitive market?
25. How do you feel the KPCS has affected your business?

26. I am aware that dealers often help miners by acting as supporters? How does a dealer choose whom to support?
27. Who is most likely to support legal mining: the Lebanese/ Sierra Leonean/ Maraka dealers? And illegal mining? Why is this?
28. What benefits does supporting bring to dealers? What are the disadvantages?
29. Is there anything a supporter can do to stop miners/diggers cheating on their commitment to sell diamonds to them only?
30. What are the normal terms for supporting a miner? i.e. How do you decide how to allocate winnings?
31. What do you think about the Diamond Area Community Development Fund? What benefits have you seen come from this fund?
32. It is understandable that systems of patronage continue to be paramount in how the diamond industry has been governed. What can you tell me about these local networks?
33. How have these patronage systems changed?
34. Some people maintain that diamonds were a factor in causing and fuelling the war. Do you agree with this? Why?
35. As a dealer what are some challenges you face in the diamond industry?

Local Government Official

1. What can you tell me about local families' typical household strategies?
2. Are there any differences between mining and non-mining households with regards their ability to cope and their strategies for doing so?
3. In your opinion, where is the biggest potential for corruption in Kono society?
4. I understand that there are different forms of corrupt practices in the mining industry and would like to get a detailed comprehension of them. For instance, people in positions of power are paid off to use their position to influence a decision or to take action. Do you agree that these practices occur? What other possible types might exist in Kono? How do you see it?
5. Which of the corrupt practices badly affects local well being?

6. What can you say about the types of collusion and intimidation that exist in the diamond industry? What are the impacts of these on the wider Kono society?
7. Have attitudes to corruption changed since the end of the war? How? Why?
8. What improvements have been made to minimize corruption? What evidence is there of this?
9. What types of corruption would be most difficult to curtail? Why?
10. In your experience, do local people have more confidence in traditional structures or national government to do the just thing by them?
11. What do you think about the Diamond Area Community Development Fund? What needs to be change for it to be used more effectively?
12. What are the factors that force or encourage people to smuggle diamonds

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