

## **Mining in Ghana's Forests: Cross-sectoral linkages and the prospects for REDD**

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### **Abstract:**

Strategies to Reduce Emissions from Deforestation and Degradation (REDD) are being pursued in numerous developing countries. Proponents contest that REDD mechanisms could deliver sustainable development by contributing to both environmental protection and economic development, particularly in poor forest communities. However, among the challenges to REDD, and natural resource management more generally, is the need to develop a comprehensive understanding of cross-sectoral linkages and addressing how they impact the pursuit of sustainable development. Drawing on an exploratory case-study of Ghana, this paper aims to outline the linkages between the forestry and minerals sectors. It is argued that contemporary debates give incommensurate attention to the reclamation of large-scale mine sites located in forest reserves, and neglect to consider more nuanced links which characterise the forestry-mining nexus in Ghana. A review of key stakeholders further elucidates the complex networks which characterise these linkages and highlights the important role of traditional authorities in governing across sectors. If the multiple roles of local resource users and traditional authorities continue to be neglected in policy mechanisms, schemes such as REDD will continue to fall short of achieving sustainable development.

**Key Words:** Forest, REDD, Mining, Sustainable Development, Cross-sectoral Governance

### **1. Introduction: Forests, Mining and Sustainable Development**

In addition to supporting the livelihoods of more than a billion of the world's poorest people, forests are home to a considerable proportion of global biodiversity, and play a significant role in the global carbon cycle, serving to ameliorate the impacts of climate change (Groombridge and Jenkins, 2002; World Bank, 2004; Nabuurs *et al.*, 2007). Properly managed forests, it is claimed, are therefore synonymous with popularised notions of sustainable development - namely, addressing the triune concerns of economic growth, societal flourishing and environmental protection. The increasingly central role of forests in the pursuit of sustainable development is captured by the subtitle of the latest Food and Agricultural Organisation's (FAO, 2012) State of the World's Forests report: 'Forests at the heart of a Sustainable Future'.

Despite the important role forests play across a spectrum of sustainable development concerns, idealised and romanticised notions of forests (Stott, 1999) as a 'silver bullet' for sustainable development mask the complexity and heterogeneity of forest contexts, and distract from a long history of inadequate attempts to manage forests sustainably (e.g. Humphreys, 2006). Interminably high rates of global deforestation<sup>1</sup> are testament to the failure of forest policies to ensure that meeting present needs does not compromise 'the ability of future generations to meet their needs' (WCED, 1987). Similar concerns are raised in other sectors, most notably, perhaps, in the minerals sector, where the finite nature of the resource and a history of environmental and social problems poses a particular problem for advocates of 'sustainable mining' (Whitmore, 2006).

There is a wealth of material on the philosophy and practice of sustainable development in both the forest and minerals sectors. But despite calls for sustainable development to be addressed in an integrated and holistic manner, policy-making and research is often criticised for occurring in sectoral silos (Tikkanen *et al.*, 2002; Mee *et al.*, 2008; Forsyth, 2010). How exactly sectors ('conceptual areas'<sup>2</sup>) are linked, and what impact this has on the prospects for sustainable development, is poorly articulated and represents a significant gap in understanding (Morris *et al.*, 2012).

This paper aims to address the interlinking and overlapping nature of sectors, examining in particular the nexus between forests and mining. The analysis draws on pilot research, undertaken between November 2011 and August 2012 in Ghana, a country where nascent attempts to implement a Reducing Emissions from Deforestation and Degradation (REDD) strategy has increased attention on the impact of mining on forests. The research was conducted in Ghana's High Forest Zone, and focused on three areas where mining and forests significantly overlap. These were 1) around Kibi in the Eastern region; 2) around Obuasi in the Ashanti region; and 3) around Bibiani in the Western region. In total, 86 semi-structured interviews were conducted, with respondents including small-scale miners, community members and chiefs in the three locations, environment and community managers from three large-scale mines, government representatives from the Minerals Commission, Forestry Commission and Environmental Protection Agency, and non-governmental organisations (NGOs).

The paper begins by contextualising the management of forests and mining in the country and highlights the centrality of reclamation to debates. The section that follows aims to explicitly outline in broad terms how the sectors are linked, categorising connections in terms of: place and space, companies and communities, and policy. Key stakeholder groups are then identified, and their roles in natural resource governance reviewed. The paper concludes that REDD should be broadening the mining-forestry debate and argues for greater attention to be paid to the actors, such as traditional authorities, who govern across sectors.

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<sup>1</sup> The FAO (2005) reports that global deforestation continues at the 'alarmingly high rate of 13 million hectares per year'. Although, these figures are under debate, see: De Fries *et al.*, 2002; Achard *et al.*, 2004; Lewis, 2006.

<sup>2</sup> After Krott and Hasanagas (2006)

## 2. Contextualising Mining and Forests in Ghana

### 2.1 *The sustainability of resource-led growth*

Contemporary economic growth in Ghana, which averages about 6% annual growth in gross domestic product (GDP), is characterised by dependency on a trio of primary products: gold, timber and cocoa (Republic of Ghana, 2005; World Bank, 2006). This growth, it is hoped, will lay the foundation for a definitive reduction in poverty and provide the springboard for transition into a middle income country (IMF, 2012). The sense of optimism is compounded by the recent discovery of oil in the country, which led former president John Kufuor to suggest that Ghana could be an 'African tiger' (BBC, 2007).

In Ghana, and other countries, however, economic dependency on abundant natural resources has not delivered the broad benefits which might be expected. This phenomenon has given credence to the notion that mineral development in Africa occurs predominantly in enclaves (Ferguson, 2005). This view has been challenged recently by Bloch and Owusu (2012) who argue that Ghana's mining industry is more deeply linked with the broader economy than previously thought. While Ghana's gold mining industry is undoubtedly growing and its dynamics evolving, their findings, based predominantly on interviews with representatives from the mining companies, the Ghana Chamber of Mines and the Minerals Commission, stand at odds with a plethora of studies which examine the issue from the perspective of communities situated *outside* of the mining enclave (e.g. Hilson and Yakovleva, 2007; Bush, 2009; Garvin et al., 2009; Ackah-Baidoo, 2012). Approaching the enclivity debates from a more normative perspective and keeping in mind the (low) ranking of Ghana and other mineral rich sub-Saharan African countries on the United Nations Human Development Index, it is difficult to argue that mineral development on the continent has delivered the broad-based benefits expected of a well integrated industry.

In addition to these debates, a report by the World Bank investigating the environmental impacts of Ghana's resource-led development concluded that environmental degradation was costing the country an equivalent of 10% of its GDP (World Bank, 2006). This finding merely served to quantify and reinforce already well articulated concerns regarding the environmental, social and economic sustainability of Ghana's dependency on natural resources.

In response to growing concern regarding the sustainability of Ghana's economic growth, threatened by environmental degradation, over-exposure to volatile commodity markets and other features of the resource curse (Auty, 1994; Karl, 1997; Robinson *et al.*, 2006), donors<sup>3</sup> coordinated their assistance through the Natural Resource and Environmental Governance (NREG) programme. The intention of this extremely wide-ranging programme is to 'support policy changes aimed at improving management of revenues and financial flows and securing livelihoods in the forestry, wildlife, and mining sub-sectors' (World Bank, 2008:9). A key part of the strategy is purportedly to reinforce cross-sectoral linkages in order to enhance environmental protection.

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<sup>3</sup> Or 'development partners', as they now prefer to be called.

The following sections provide a platform for examining these linkages by offering a brief background on the forestry and mining sectors. The predominant association between the sectors in policy discussions is then reviewed, namely the importance of reclamation, before a more nuanced and localised assessment of the cross-sectoral linkages is presented (§3).

## **2.2 Trends in Forest Management and the emergence of REDD**

Historically, forest policy in Ghana has been dominated by the creation of forest reserves, initially by colonial administrators and subsequently by successive governments (Grove, 1997). Despite being envisioned as a mechanism to raise incomes and provide jobs, the creation of forest reserves marginalised many local resource users (Wardell and Lund, 2006). This situation is reflected in the minerals sector (see §2.3). Reserves have not been particularly effective tools for reducing deforestation either, Ghana has lost 78% of the forests which once covered a third of its land surface (Hawthorne, 1989; Wagner and Cobbinah, 1993). In light of this failure, forest policy has been directed towards addressing logging, most recently through the Voluntary Partnership Agreement (VPA). This mechanism, which aims to combat illegal logging and improve forest governance, is being implemented under the European Union's Forest Law Enforcement, Governance and Trade (FLEGT) programme. Response to the scheme by actors involved has been relatively positive (Wiersum and Elands, 2012). As one respondent from a Ghanaian non-government organisation (NGO) put it:

‘the VPA process has helped communication of community concerns move up through the levels, from district, to sub-regional, regional and national... Forest Forums emerged out of the VPA and these are essentially the mouthpiece of local forest users for all forest issues.’

Perpetual deforestation, projected to be occurring at a rate of about 2% annually (FAO, 2005), has motivated Ghana to embark on implementing a REDD scheme. Most REDD schemes stand in contrast to the voluntary and bilateral VPA approach, and align more closely with hegemonic neoliberal political and economic norms, being as they are, premised on the use of market mechanisms to incentivise reductions in deforestation.

REDD is used as an overarching term to describe a range of policies designed to financially compensate countries for reducing their deforestation. In Ghana, REDD proposals and six pilot projects, implemented by a range of private and quasi-governmental institutions, are being developed with assistance from the World Bank's Forest Carbon Partnership Facility. Most national schemes, including Ghana's, are based on a payment for ecosystem services (PES) model (Wunder, 2008), with initial financial support coming from state sponsored donor agencies (Angelsen *et al.*, 2009; Republic of Ghana, 2010). But it is anticipated that a growing proportion of the finance will be delivered privately through market mechanisms or carbon funds (Isenberg and Potvin, 2010). The 2012 United Nations Conference on Sustainable Development, held in Rio de Janeiro (Rio+20), further embedded market-based approaches to forest management by framing progress towards sustainable development as a transition to a 'green economy'.

Proponents of REDD argue that schemes are a 'win-win', capable of delivering a reduction in deforestation and contributing towards sustainable economic development and poverty alleviation. However, instead of broadening the debate on forest management, most critiques of REDD focus

predominantly on the technical aspects of policies, particularly regarding monitoring of carbon stocks and financial arrangements, which has merely served to shift focus away from well documented barriers to sustainable forest management. Hansen *et al.* (2009) outline those most pertinent in Ghana, including land and tree tenure, a poor understanding of deforestation dynamics and mechanisms for benefit sharing. In particular, there is concern that REDD programmes will continue to follow the trend of numerous historical forest interventions and marginalise local resource users. This concern is mirrored in the minerals sector where conflict is prevalent, largely because communities have been displaced to make way for the activities of large-scale multinational companies.

### **2.3 The dual mining economy and sustainability**

During the period 1966-1993, Ghana was characterised by a series of *coup d'états* and a period of World Bank and IMF structural adjustment programmes (SAP) which achieved little meaningful development, apart from succeeding in promoting private investment in the mining industry (Whitfield, 2005; Haselip and Hilson, 2005; Republic of Ghana, 2005). The priority given to the mining sector under the 1983 Economic Recovery Programme produced a 5-fold increase in gold production between 1980 and 1996 (Akabzaa, 2000). The formal mining sector now generates approximately 40% of gross foreign exchange in Ghana and accounts for 5.7% of GDP (Aryee, 2001; Republic of Ghana, 2005).

Despite its contribution to the national economy, the industry has been characterised by a long history of environmental degradation and social conflicts. Disputes are particularly prevalent where communities are relocated to accommodate multinational mining companies. A recent example is the relocation of Dokyiwa in the Obuasi Municipality. In response to criticisms that the industry represents the anti-thesis of sustainable development, there has been an industry-wide move, also reflected in Ghana, to adopt corporate social responsibility (CSR) agendas and promote the Extractive Industries Transparency Initiative (EITI) (Hilson *et al.*, 2007; Hilson, 2011). One of the more serious challenges facing the large-scale mining industry and policy-makers is the presence of a very productive, but environmentally and socially contentious, artisanal and small-scale (ASM) mining<sup>4</sup> sector.

The ASM sector, since its formalisation in 1989, has seen a 23-fold growth. It now produces over 10% of all gold mined in Ghana, employs more than one million people directly, and generates significant employment in a plethora of support services, including, transport, food vending, mechanics and trading (Amankwah and Amin-Sackey, 2003). However, the predominant focus of policy-makers on large-scale mining has resulted in significant informality in the ASM sector (Banchirigah, 2006; Hilson 2012). The critical role ASM plays in the rural economy, where unemployment can be as high as 90% in the 15-24yr age group in mining areas, is under appreciated (Amankwah and Amin-Sackey, 2003; Hilson, 2002).

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<sup>4</sup> Although several definitions of ASM exist, broadly, it is labour intensive mining activities with little or no mechanisation.

The burgeoning growth experienced in the large-scale sector was catalysed by mining sector reforms implemented alongside SAP. The concurrent growth in ASM sector was underpinned by both unemployment as a result of SAP policies, and 'deagarianisation' in response to the failure of agriculture (Bryceson, 1996; Ellis, 2006; Banchirigah and Hilson, 2009; Hilson and Garforth, 2012). These dynamics have led to the establishment of a dual-mining economy, where the large-scale and small-scale sectors are quite distinct, the former being supported through economic reform, and the latter developing, partly, as a result of these reforms (Banchirigah, 2006). The impact of the minerals sector on sustainable development is as varied as the sector itself. The large-scale sector provides considerably more to the formal economy, whereas the ASM sector provides a valuable source of livelihoods to vulnerable communities, although both sectors have poor records when it comes to environmental and social performance.

Environmentally, deforestation is one of the principal impacts of mining, particularly surface mining which has become the dominant mode of operation in recent decades. Discussions with key stakeholders over the impact of mining on forests revealed how central the role of reclamation<sup>5</sup> was in debates. The next section goes on to examine the key competing discourses on reclamation and argues that it is restrictive to consider the sectoral links in this narrow way.

#### ***2.4 The centrality of reclamation***

Discussions in policy and NGO circles regarding the impact of mining on forests are effectively reducible to debates regarding reclamation. On the one hand, environmental laws in the country state that mining companies have to return the land to either its original use, or a use agreed with the host community. In this instance the impact is theoretically zero. As one government official said,

'the mining companies promote the idea that their activity is non-additional<sup>6</sup> to REDD. Because they reclaim the land, the net impact is zero, so they shouldn't be included'.

Critics of the mining sector argue that while the policies and laws are in place, monitoring of compliance is poor and enforcement of laws is weak. Environmental NGO activists often display despondency, as one said,

'there isn't enough capacity... how can you battle the mining companies? Ghana is an emerging country and nowhere is the judiciary perfect... but there are no environmental lawyers in the country. [The lawyers] they just see a few trees and say ok, the land is being reclaimed. They don't consider which plants are being established, has the soil contamination been treated to ensure the most suitable or indigenous plants are grown on reclaimed sites... they don't understand how ecosystems work'.

Another respondent from an NGO added,

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<sup>5</sup> The restoration of mined land to its original use, in this case forests.

<sup>6</sup> Additionality is a key concept in REDD, and refers to the notion that REDD policies or strategies should not address or fund activities that would happen anyway.

‘the enforcement and monitoring is poor, and it is well known that it [reclamation] doesn’t happen, but the mining companies use this argument to divert attention away from what they are doing’.

In the case of ASM activities, the predominance of informality makes enforcing reclamation particularly difficult. Often, ASM operators enter into informal agreements with land owners, who are also engaged with the mining on their land. As one government official explained, the miners say:

“...when we finish we will reclaim for you to plant”, because he is doing it illegally after that he runs away. Where will you take him to? He did illegal mining, and you agreed with him to do the illegal mining, and you also partake in it, so where do you send him?”

Evidently, the reclamation stage is the most key point where mining and forestry overlap. But due to a lack of data, debates have become simplistic, dichotomous and politicised. Effectively managing cross-sectoral linkages between mining and forests requires developing a more nuanced outlook. The following section aims to outline in greater detail how the sectors are linked, particularly focussing on linkages which are neglected in policy. This provides the basis for examining key stakeholder groups and their roles in natural resource governance.

### **3. Linking forests and mining**

#### ***3.1 In space and place***

Forests in Ghana are concentrated in the high forest zone (HFZ), which broadly covers the southern third of the country. The HFZ contains 216 state reserves<sup>7</sup> which cover 1.7million hectares. However, only 2% are said to be in excellent condition, with approximately half being in reasonable condition or better. The remaining half are mostly degraded or worse. There are about 0.4 million ha of off reserve forest spread across a 5 million ha area, and it is in these areas where most deforestation and degradation has occurred (Osafo, 2005).

The same broad geographic area, the southern third of Ghana, is also where the majority of mining activities are located. Overlaying the complex forest mosaic is an equally complex series of concessions for different stages of the mining process, such as prospecting, exploration and exploitation. In addition to the large-scale concessions, there are now more than 800 25 ha small-scale mining licences in the country which represent an estimated 10% of all ASM activity<sup>8</sup>, the remainder working informally. Small-scale mining activities frequently overlap with forested areas because alluvial deposits, which are most suitable geologically, are concentrated around river bodies. River bodies for which many forest reserves were instituted to protect.

The formal division of land into concessions and reserves encourages the conceptualisation of land-use as a jigsaw, with distinct sections neatly juxtaposing. In reality, resources overlap in much more complex and fluid ways. Forests are not merely those trees which fall inside designated reserves.

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<sup>7</sup> There are several categories of reserve ranging from production reserves, which are effectively logging concessions, to wildlife reserves which are completely protected in law and enforced by armed rangers.

<sup>8</sup> Data and estimate from interview with government official.

There are many ways of defining forests<sup>9</sup>; in the case of most REDD schemes, carbon stocks of an area is more important than whether the area has been designated as a forest or not. This jigsaw conceptualisation of land-use further limits the scope of cross-sectoral policy-making. In the case of forests and mining, it means the debate is often restricted to formal mining inside formal forest reserves. As the following section outlines, this is a rather simplistic.

### ***3.2 In companies and communities***

During the surge of mining exploration in the 1990s, 17 companies were granted prospecting licences in areas that contained forest reserves. Of these, about 6 have been permitted to start mining, a decision-based ostensibly on how much the respective companies had invested in prospecting. While the original decision-making is widely criticised for lacking transparency, these areas are now the most scrutinised and closely monitored, and are controlled under the policy document ‘guidelines for mining in productive forest reserves’.

However, it is not only mining within forest reserves which links the sectors. Many mining companies also hold logging concessions in order to provide the wood with which they line their shafts. Similarly, some small-scale miners use trees, sometimes those planted under the reclamation schemes of large-scale companies, to line their own shafts. Approximate ‘back of the envelope’ estimates suggest that for every 50m of shaft in the small-scale sector, 1000 1m sections of 10cm diameter wood is required. Although many ASM operators do not line their shafts, those who do use appreciable quantities of wood, and can undermine attempts at reforestation, as trees between 5 and 10 years old are often the appropriate size for lining shafts. Some miners reported increasing distance to find wood as a growing concern and one which might simply lead them to stop lining the shafts.

It is not only within mining operations where mining and forests overlap. At a local artisanal level, the imposition of a chainsaw ban in 1998 has driven people from chainsawing into mining. The phenomena of individuals moving from farming into mining, often on a seasonal basis, is well reported (Banchirigah and Hilson, 2009; Hilson and van Bockstael, 2012), but ASM as a location for criminalised chainsaw operators, was not among the expected outcomes of the chainsaw ban. As one chainsaw operator from the Kibi area in the Eastern region put it in an interview:

‘recently the [chainsaw] activity has gone down because the government has been trying to stop us. And because the government was harassing us, most left into mining’.

Chainsaw operators around Kibi are finding it particularly difficult to find ‘carriers’, teams of up to 25 people who would carry logs from the forest to the road for transport. One operator stressed the seriousness of the situation in an interview, explaining that

‘what worries us most is finding carriers, initially it was easy, but now most people have shifted into mining’.

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<sup>9</sup> See the United Nations Framework Convention on Climate Change (UNFCCC) Marrakesh Accords (2002)

As well as conceptualising land-use in a static 'jigsaw' way, often livelihoods are also understood in quite simple terms. Livelihoods in forested regions are often made up of farmers who also operate chainsaws, and may turn to mining in order to further diversify their livelihood and incomes. In the case of companies and individuals, mining and forestry are interlinked in complex and poorly understood ways. Focusing purely on where formalised mining overlaps with formal forest reserves risks missing out on several important rural dynamics which affect the management of natural resources. In policy, these dynamics are not well recognised, which limits its effectiveness.

### **3.3 In policy**

In Ghana, three government agencies have primary responsibility for managing mining, forests and their intersection; The Minerals Commission and Forestry Commission, which are both under the Ministry of Lands and Natural Resources, and the Environmental Protection Agency (EPA), housed in the Ministry of Environment, Science and Technology. Numerous pieces of legislation and policy documents are relevant. However, two address the link explicitly, the 'environmental guidelines for mining in production forest reserves in Ghana' created in 2001 as exploitation began, and 'Operational Guidelines for Mineral Exploration in Forest Reserves for Selected Companies' created in 1996 after it was decided companies which had been exploring in forest reserves should be more closely monitored.

The operational guidelines recommend the creation of a cross-sectoral liaison group<sup>10</sup> to monitor companies' adherence to the guidelines. This group, funded by an additional 0.6% royalty payment (Republic of Ghana, 2001), undoubtedly contributes to a growing cross-sectoral dialogue. But the narrow scope of the guidelines and the liaison groups' mandate reinforces the limited view of mining-forest interactions as large-scale mining in forest reserves. Moreover, as one member of the liaison group explained in an interview, the focus of the group is ensuring successful reclamation:

'[the] liaison group will monitor the mining companies to implement reclamation and re-vegetation of the areas mined in the forest... what it means is that the forest cover will increase'.

This stance underscores how mining and forestry interactions are understood as being solely about reclamation in the formal sector.

This position, however, merely reflects the stance in broader legislation and policy documents. Including, the draft National Mining Policy (2010), the Environmental Protection Agency Act (1994), Environmental Assessment Regulations (1999), the Forestry Commission Act (1999), and Forest and Wildlife Policy (1994), all of which focus on reclamation or the prohibition of activities. There is little or no guidance on how to deal with the complex and various situations which face local (district level) natural resource managers on the ground. In order to elucidate these situations more clearly,

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<sup>10</sup> Made up of representatives from the EPA; Forest Services Division of the Forestry Commission, Minerals Commission and its Inspectorate Division, Ghana Chamber of Mines; and the District Assembly. It is hoped the guidelines will soon be updated to make provision for the additional inclusion of the Water Resources Commission.

the following section provides a broad overview of the key stakeholder groups and their role in land-use governance.

## **4. Key Stakeholder groups and their governance role**

### **4.1 Government Agencies**

The principal role of the trio of government agencies responsible for managing Ghana's natural resource wealth is twofold. First, the permitting and licensing of mining and timber activities; and second, monitoring and enforcing the environmental regulations. The activities of the Forestry Commission, divided into the Timber Industry Development Division, Forest Services Division and Wildlife Division, reflects the dual nature of the mining economy when it comes to the management of mining on forest lands. In the case of large-scale mining, it must explicitly waive entry restrictions on forest reserves for mining companies granted licences and, after assessing the value of trees destroyed by mining, collect stumpage fees. With regard to ASM, its principal role is, in partnership with the police and military, to enforce entry restrictions in forest reserves where no ASM activities are permitted.

While large-scale concessions in forest reserves are only made with the approval of senior forestry officials, local forestry managers are frequently frustrated by their lack of input into decision-making which is evident in their complaints at trying to manage reserves threatened by mining. As one forest reserve manager said in an interview:

'...the mining is not helping at all. They only move to where the gold is, so you only have the pit and haul road. We go and count the trees and they pay the stumpage fees. But this opens up the land to local farmers who have had their land taken away... the EIAs [Environmental Impact Assessments] say they have to backfill and re-plant, but it can't be the same'.

Similar frustrations were vented by reserve managers attempting to protect forest reserves against small-scale miners:

'if you manage to arrest him [small-scale miner], the court fine is small to them. They don't fear it. They know, but they don't fear it. Because at the end you say, you won't kill him, it is a fine, 200 Ghana cedis and he'll go back, he'll go back to the reserve'.

The Minerals Commission is responsible for the granting of large-scale concessions in forest reserves, a process which historically has been shrouded in secrecy. The Center for Indigenous Knowledge and Organisational Development (CIKOD) Annual Transparency Report Card 2010 ranks all indicators for governance of extra-sectoral activities affecting forests, including mining, as 'not transparent' (CIKOD, 2010). Contemporary decision-making is based implicitly on the principle of cost-benefit analysis, although this is not a formal requirement in policy and there is a chronic lack of data, making cost-benefit analysis an ineffective governance tool in Ghana. Regarding small-scale mining, the Minerals Commission embarked on a formalisation project during the 1980s which has enjoyed limited success (Hilson, 2007). Despite the presence of ASM in forest reserves and off-

reserve forests, managing these activities falls outside the minerals commissions remit, as one government official explained, 'the minerals commission does not make any recommendations for any small-scale licence to be granted to any individuals or groups in a forest. The commission does not do that.'

In addition to overseeing the environmental management of legal large- and small-scale mining operations, it is the EPA which is, in theory, responsible for addressing the environmental impact of ASM activities which occur in off-reserve forested areas. But the view, generally, is that this is beyond the scope of the EPA, and that it is the responsibility of the Minerals Commission to manage all ASM activities, legal or otherwise. It is this dynamic which gives rise to cross-sectoral land-use management issues falling between already-stretched government agencies.

District Assemblies, the centre piece of Ghana's attempt to decentralise governance and funded in part by natural resource royalties, could play a role in highlighting and addressing those cases where land-management issues appear to fall between government agencies. But their role in natural resource governance is limited by the presidentially appointed, rather than locally elected, chief executive and a centrally controlled budget. Furthermore, district authorities have neither the autonomy nor the authority to co-ordinate with other agencies, such as the Mineral Commission, at the district level. As a result, the potential of District Assemblies to respond to a variety of local contexts and act across sectors is extremely limited.

In the presence of a high-degree of informality it is important to address the actual resource users in order to understand the social, environmental and economic impacts of mining in forest areas. First, private formal companies (§4.2) and then local resource-users (§4.3)

#### **4.2 Private Sector**

As outlined previously, the growth of the mining sector under structural adjustment has led to the presence of mining companies both in forest reserves, and in off-reserve forest areas. These companies' activities are regulated by a range of laws and policies. Their formal link with forestry is through paying stumpage fees for commercial trees which are damaged, and more importantly, through reclamation. Outside this formal link, the presence of mining companies in forested areas increases pressure on forests through reducing the amount of land available for farming, and increasing accessibility of forest reserves. As one environment manager at a mine said: 'illegal farming is a much greater driver of deforestation than mining... [but] it is not our responsibility to manage the reserve, that is for the forestry commission'.

This forest management impasse develops as companies who are already criticised for paternalistic CSR strategies are reluctant to act as *de facto* protectors of forest reserves and forest reserve managers require permission from the company before they can enter or patrol areas under concession to mining companies. This leaves farmers free to enter reserves in search of increasingly scarce land. The observation of farmers using haul roads<sup>11</sup> in forest reserves under concession in the

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<sup>11</sup> A road built to transport ore from a pit, located in this instance in a forest reserve, to the processing plant, outside the reserve.

Western Region of the country lends credence to this argument, and the theory that infrastructure development in forests accelerates deforestation.

These broader interactions between mining and forestry are notoriously difficult to quantify and govern (Geist and Lambin, 2002). Similarly, at a local-scale, where resources are being utilised by artisans, the interwoven nature of the sectors makes developing holistic and integrated approaches to governance challenging.

### **4.3 Local Resource Users**

Chainsaw operators and small-scale miners share many characteristics, most notably, the criminalisation of their activities, which has led to a high degree of informality. This, in turn, has contributed to growing complexity in the sectors, especially in ASM. Although the term 'galamsey'<sup>12</sup> is frequently used to refer to small-scale miners, this characterisation hides the heterogeneity of actors involved. Burgeoning growth in the sector in response to unemployment and inadequate agricultural earnings has led some to argue that the sector's growth is poverty-led. However, the increasingly capital intensive methods used, especially the widespread use of excavators costing 8000 Ghana cedis<sup>13</sup> per day, have led others to argue that it should be viewed as a wealth-creating activity. The presence of debates over which perspective the sector should be viewed from simply confirms that a range of actors with a range of motives are entering the sector. This situation is dealt with by resource managers through a kind of complicit ambiguity; on the one hand, the fines and punishment for galamsey or chainsaw operators are too punitive to be effective, and on the other hand a recognition that these activities are essential components in people's livelihoods. As one reserve manager put it, 'if people are dying, what are we working for?'

In many cases, it is a combination of traditional authorities, land-owners and sponsors who determine where ASM activities happen. There is some obscurity to the details of these arrangements and it also varies from place to place. In Kibi, for example, there is considerable debate regarding the role of the Okyehene (paramount chief), who denies any involvement, while critics point out that mining is taking place a matter of meters from his house. Elsewhere, traditional authorities openly admit that they permit mining activities on land they hold in trust, arguing that they own the land and the communities have a right to the activity that has been handed down to them 'from their grandfathers since time immemorial'.

Deference to traditional authorities and their central role in negotiating agreements between miners and land-owners makes them of great importance in land-use governance in Ghana, a feature not recognised in policy which makes it seem rather disconnected from the reality of local contexts.

### **4.4 Traditional Authorities**

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<sup>12</sup> The word *galamsey*, meaning 'gather them and sell', as used in everyday parlance in Ghana is treated as both a verb and a noun, and therefore can be used synonymously with ASM. In this instance, it refers to the agents of ASM, rather than the activity itself.

<sup>13</sup> About US\$4000

Formally, the role of traditional authorities in managing Ghana's natural resources is passive. They are consulted during the granting of minerals concessions and they receive a proportion<sup>14</sup> of royalties paid by companies, which is distributed through the Office of Administration for Stool Lands. There is no official guidance on how these royalties should be used, so the impact on community development is mixed. Similarly, they are paid royalties by timber contractors, but as one Forestry Commission official pointed out:

'it [the royalties] is meant for the stool, but frankly speaking, I don't think they distribute it, they just pocket it for themselves. And this is one of the reasons the Forestry Commission implemented the SRA (social responsibility agreements) with timber companies, and mining companies have the same thing'.

Furthermore, traditional authorities have a large role to play in determining where informal activities such as ASM occur. Another Forestry Commission official said:

'...these things don't happen in isolation. Most of the time, the chiefs have given out the land for that [ASM] purpose, but they do not have any environmental awareness, they just take the money paid out to them as royalties'.

The unaccountable nature of traditional authorities in Ghana natural resource revenue management has been widely discussed in terms of local elite capture (Opuku, 2006). Additionally, Marfo *et al.* (2012) cite this as a key constraint in governing the equitable distribution of revenue accruing through REDD mechanisms. The current structure of natural resource benefit sharing in Ghana frames traditional authorities as passive recipients of royalties. This both undermines their authority, and underestimates their power over land-use decision-making across all sectors of the rural economy. If the linkages between mining and forestry are to be better understood and managed to balance social, environmental and economic goals, then the role of chiefs must come under greater scrutiny and be less marginalised in policy.

## **5. Concluding Remarks: Critical Reflections on Cross-Sectoral Governance and Prospects for REDD**

The Ghanaian Government, supported by donors, are pursuing a REDD strategy which, it is hoped, will balance the need to reduce deforestation and promote community development. The project-based nature of the REDD strategy goes against the growing trend of budgetary support, which has developed in part due to concern about the lack of coordination between sectors, particularly with regard to natural resource management. This decision does not appear to represent a U-turn in donor strategy, but rather it is hoped that both modes of assistance will be mutually supportive. However, it raises concerns that despite notional calls for REDD to have an integrated approach

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<sup>14</sup> 20% of royalties (typically between 3-6%) are paid in to the Mineral Development Fund, 50% of this is awarded to the Office of the Administrator of Stool Lands who keep 10% and distribute 55% of the remaining money to district assemblies, 20% to traditional authorities and 25% to the stools of mining lands (Hilson and Nyame, 2006).

across sectors, the process will support projects forging ahead without due consideration given to the complexity of cross-sectoral dynamics.

This paper has outlined some of those dynamics in relation to the nexus of mining and forestry, and demonstrated that framing the debate simply in terms of large-scale mining in forest reserves neglects a significant proportion of the relevant linkages. The REDD process should be broadening the mining-forest debate and explicitly addressing the prevalent trade-offs and conflicts, rather than overlooking the complexities and relinquishing responsibility for decision-making to a mixture of private investors and quasi-governmental agencies who are implementing pilot projects. Importantly, the most neglected linkages are those most pertinent at the local level, where efforts to pursue sustainable development are most warranted.

The REDD process in Ghana mirrors other natural resource strategies in its relative neglect of ASM. As one EPA official put it in an interview: 'ASM is like a swear word, so it won't be addressed under REDD'. The fact that ASM is widely considered a threat to sustainable development, despite being among the few viable livelihood options out-of-work chainsaw operators have, means it should have a more prominent place in both REDD and national strategies more broadly.

In the large-scale sector, the dominant debates revolve around the compliance and success, or otherwise, of companies' attempts at reclamation. The lack of available data and transparency on reclamation is compounded by what one NGO activist bemoaned in an interview as: 'the total absence of environmental lawyers in the country'. This is obviously going to inhibit the ability of concerned individuals, communities, and even government agencies to enforce environmental laws.

Environmental lawyers are a key missing stakeholder, if forest management is to fulfil to a greater degree its potential to contribute towards sustainable development. More broadly, policies such as REDD need to move beyond the rhetoric of cross-sectoral coordination and identify other concrete barriers to attaining sustainable development. In particular the role of stakeholder groups which can govern across sectors, such as traditional authorities and District Assemblies, must be addressed more explicitly in policy. These actors govern across the complex networks that characterise natural resource governance, in Ghana and elsewhere, and unless they are integrated in formalised decision-making processes in a meaningful and tangible way, then REDD and other sustainable development initiatives are unlikely to fulfil their potential.

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