REDD+ and Large-Scale Mining – What Scope for Forestry-based Legacies in Ghana?*

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Abstract

With support from the World Bank's Forest Carbon Partnership Facility (FCPF), Ghana is pursuing a strategy to Reduce Emissions from Deforestation and Degradation (REDD). This process has drawn attention to the environmental impact of mining, particularly in forested areas. Debates regarding the impact of mining on forests, in both the large and small-scale sectors, hinge on the relative success of reclamation. This paper presents an exploratory assessment of the potential for large-scale mining companies to engage with the REDD process and include a forestry based component in their legacy. Such schemes could support the sustained success of rehabilitation programmes, improve community relations and mitigate climate change. Antecedents for schemes, which include improved data collection and availability, community engagement and the implementation of pilot schemes, are outlined before reviewing the key challenges and most salient risks. It is concluded that while forestry based legacy schemes ought to appeal to large scale mining companies seeking to increase their environmental and social legitimacy, more work needs to be undertaken in order to establish programmes and mitigate the risks involved.

1 Introduction

Ghana's wealth of natural resources, particularly minerals and forests, has not been successfully converted into widespread economic wellbeing. Not only is pervasive and persistent poverty an ongoing cause for concern, but the high rate of exploitation of natural resources accounts for 10% of GDP annually and reduces potential for economic growth by 1% (Anon, 2006). This situation undermines prospects for sustainable development, as well as highlighting the significance of debates regarding the relative importance of economic growth and environmental conservation. These debates hinge on the paradoxical dependency of local and global communities on both the exploitation, and the conservation of, natural resources. Forests, for example, provide timber for construction and agricultural land, but removing forest cover threatens the provision of ecosystem services such as soil conservation, regulation of the hydrological cycle and climate mitigation (Sukhdev, 2008), as well as Non-Timber Forest Products (NTFP) including, game animals and other food, firewood and medicinal plants (Abane, 2009).

In recognition of the importance of forests, the United Nations is pursuing a strategy to Reduce Emissions from Deforestation and Degradation (REDD), and simultaneously enhance forest carbon stocks, biodiversity and forest based livelihoods (REDD+) (Angelsen *et al.*, 2009). Currently, national REDD+ strategies in 37 countries are being developed with assistance provided by the World Bank's Forest Carbon Partnership Facility (FCPF); and a further 14 are being supported by the United Nations' REDD Programme. Details of these REDD+ strategies, and the overarching REDD+ framework are still under negotiation, but in essence the aim is to establish a 'payment for ecosystem services' (PES) model (Wunder, 2007). These are based on providing financial compensation to countries, communities or individuals, either through a fund supported by aid donors or via a carbon market, for reducing deforestation (Isenberg and Potvin, 2010).

REDD+ represents the latest juncture of a concerted globalised effort to address economic, environmental and social concerns simultaneously, often discussed under the rubric of 'sustainable development' (Torgerson, 1995). The sustainable development discourse has increasingly drawn attention to mineral exploitation due to its association with wealth creation and concurrent environmental destruction. This is particularly true in developing countries where multinational mining companies have historically paid low royalties and often performed poorly with regard to environmental management. In Ghana, mining companies are subject to numerous laws and regulations, most notably, the Mining and Mineral Laws Act 703 and the Environmental Protection Agency Act 1994. Despite these, Non-Governmental Organisations (NGOs) and communities bemoan the lack of monitoring and enforcement, a problem compounded by a lack of transparency.

Social and environmental issues have been amongst the key drivers for the industry wide movement towards Corporate Social Responsibility (CSR) strate-

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gies, and the recognition that companies need to establish, build and maintain a 'social licence to operate'. Some companies are beginning to recognise the potential to augment their CSR strategies with carbon finance. In Madagascar, for example, Rio Tinto is collaborating with the International Union for Conservation of Nature (IUCN) on a project aiming to support conservation in order to 'offset' their activities (Olsen et al., 2011). Part of this project is exploring funding opportunities through engaging with PES systems and potentially REDD+.

In Ghana, the prospect of a national REDD+ scheme, combined with the recent granting of licences to mine in forest reserves, has heightened interest in mining in forest areas. However, this has not been translated into a coherent strategy for integrating REDD+, and other forestry policies, with mineral exploitation. In the large-scale minerals sector, a key component of any strategy aimed at addressing these inter-sectoral linkages is the mine legacy. Against this background, this paper aims to explore the potential for large-scale mining companies' legacies, as part of their CSR strategy to include a forestry component through engaging with REDD.

The following section outlines what is meant by the term forestry-based mine legacies, and how they may be established. Subsequently, the potential of such schemes to address key legacy issues such as livelihoods and the environment are discussed. After reviewing prerequisites for schemes, the key challenges and risks are outlined. The paper concludes with a discussion of feasibility issues in the Ghanaian context.

1 Characterising Forestry-based Legacies and their Potential

Most of the issues that require consideration during mine decommissioning, including, safety, infrastructure, environmental hazards, livelihoods of employees and local communities, are contingent upon the quality and success of reclamation activities. Therefore, debates regarding mining in forest areas are reducible to debates over reclamation. An emerging land-use that could be pursued through reclamation activities, and eventually as part of decommissioning strategies is forestry. The potential to utilise carbon finance available through REDD+, or other PES schemes increases the attractiveness of forestry-based legacy programmes. Under such schemes, large-scale mines would rehabilitate a portion of the land with intention of developing a forested area. When the mine closes and the land is returned to the community, the land could be managed and monitored, and payment made for carbon storage and sequestration.

This approach has numerous potential benefits. At a local level, it could support community development by delivering long-term rehabilitation of degraded forest areas, and the ecosystem services that intact and healthy forests provide. Furthermore, by utilising emerging carbon payments it could provide a financial income to communities who would take on responsibility for managing the forest.

Rehabilitating forests also mitigates climate change (Anon, 2007). The burden for addressing climate change should not fall upon the poorest communities. Nonetheless, considering that forests can act as a 'safety net' for the poor (Wunder, 2001), rehabilitating forests could be seen as a win-win scenario; especially if income derived through PES could be used to support productive economic activities.

The scope for significant carbon sequestration at mine sites is limited due to the relatively low spatial extent of activities; however, mined sites may have significant potential to sequester carbon into degraded soils. This contention requires considerable empirical investigation in order to ascertain robust estimates, but in the United States of America, Sperow (2006) estimates rehabilitating mined areas could contribute up to 12.5% of a 7% target reduction in total emissions.

Forestry-based mine legacies certainly have potential to deliver numerous benefits to local and global communities. There are, however, numerous issues that require resolving before establishing pilot projects. These are discussed subsequently before outlining the key risks and challenges associated with prospective schemes.

2 Prerequisites for Piloting Forestry-based Legacies

In theory, the implementation of forestry-based legacies at mining sites appeals due to the prospect of rehabilitating forested areas with its associated local and global benefits. Additionally, the prospect of REDD+ suggests that benefits could go beyond the ecosystem services, which often seem rather abstract from the perspective of local communities trying to meet their basic needs. Before establishing forestry-based legacies, or implementing pilot projects, however, there is a need to address the dearth of quality data regarding carbon stocks and potential sequestra-

[1]In this case legacy refers to the reclamation and decommissioning strategies upon which rests future land-use and the long-term impact of the mine. It does not refer to inherited legacies and their CSR implications, a situation which is common as mergers and acquisitions are widespread in the mining sector (Hilson, 2011).

[2]There is a burgeoning artisanal and small-scale mining (ASM) sector in Ghana. While ASM is an important sector whose interests should be accounted for, it is not the focus of this paper.

tion rates. Also required is an assessment of the willingness of companies to support such schemes, and communities to engage with them.

Currently, there is limited data on the carbon dynamics of reclamation on mine sites. This is partly because carbon is not currently included in Environmental Impact Assessments (EIAs), and therefore not measured. Furthermore, data which may exist is not easily available. This lack of transparency regarding reclamation only serves to fuel speculation and politicise debates regarding the environmental impact of mining. If forestry-based legacies are to be pursued then this lack of data and transparency must be addressed. This could be achieved relatively easily; for example, by including a carbon accounting requirement in EIAs and Environmental Management Plans (EMP), and publishing technical environmental audits online in a timely fashion.

In addition to tackling the paucity of data, work is required to assess, and potentially build the willingness of companies and communities to engage with schemes. Evidently, REDD+, or another PES system, needs to be established before any financial returns could be delivered. In the interim period, mining companies, if they were willing, could themselves fund PES schemes on reclaimed sites.

A more crucial component for success is the willingness and ability of the local community to participate and take ownership of forestry schemes. Ostrom's (2009) work on the decentralisation of forest resources demonstrates that forestry projects are most likely to deliver benefits both in terms of carbon sequestration, and community development when decision-taking, rule-making and enforcement are decentralised and undertaken by the community.

Overcoming historically poor relations between mines and their 'host' communities is amongst the key challenges facing proponents of legacy schemes requiring collaborative partnership. This challenge and associated risks are discussed in the following section.

3 Key Challenges and Risks

Forests provide communities with a broad range of benefits. Therefore, the idea that large-scale mining companies, at decommissioning, could reclaim part of their concession as a forestry project creditable through a PES system such as REDD+ has broad appeal. The previous section outlined the necessity to produce and communicate data on carbon dynamics at mine sites and establish the willingness of companies and communities to pursue a forestry-based component in the legacies. However, at the pilot stage, and beyond, there are several key challenges. These include, trust, permanence, conditionality, reputational risks to mining companies, and ownership. Prominent amongst these is trust.

Historically, large-scale mineral development has occurred in relative isolation from the communities in the localities in which they work, a phenomenon widely described as 'enclave' development. Considering the lack of benefits reaching local communities, and the environmental and health costs often associated with mining, it is unsurprising that trust in many mine-community relationships is low. Building a productive and co-operative relationship between mine and community is essential to forestry-legacies because, without community commitment, the long-term and continuous process of monitoring and managing the area is unlikely to occur. Marginalising land-users in conservation efforts often leads to failure. Dondeyne *et al.* (2009) illustrate this point when they describe how frustrated ASM communities around the Gorongosa, a Mozambican National Park, deliberately started bush fires.

A key feature of PES schemes such as REDD+ is conditionality. This refers to the imperative that payments should only be paid if the service is actually delivered. This means that projects which fail to deliver forest conservation, will also fail to deliver financial benefits to communities. The potential for conflict is therefore increased as different interest groups pursue their agendas. Perhaps more importantly, unless conditionality is understood fully by all parties, then these schemes could further deteriorate relationships if expectations are not appropriate and therefore not met.

This risk is also present if mining companies initially fund projects and then transfer to a REDD+ scheme; the price of carbon, and the permanence of funding through REDD+ are uncertain, making any transfers of responsibility for payment potentially disruptive. If communities' interests are to be at the centre of conservation and legacy schemes, then proposals such as these should not be pursued without sufficient attention being paid to these issues. Too often the hubris of conservationists, CSR managers and policy-makers has led to the pursuit of fashionable schemes at the expense of the communities they are supposedly assisting.

In addition to the challenges and risks associated with community wellbeing, companies also face the risk of reputational damage and accusations of greenwashing by involvement with schemes, particularly if they fail to deliver the benefits propounded. Whilst different interest groups will inevitably continue to pursue their agendas, there is at least one laudable feature to schemes of this nature; they open up the work of the company directly to scrutiny. Unlike the case of Rio Tinto's 'offset' scheme in Madagascar, which distracts from the direct impacts of the company, legacy schemes increase transparency and would also help provide data in an area where the lack of information fuels the politicisation of mining-forestry debates.

4 Discussion and Conclusion

The need for creative and novel solutions that can reconcile the imperatives of economic growth with environmental protection is growing. One area where trade-offs and conflicts between imperatives is acute is in the minerals sector. PES schemes, such as REDD+, provide a basis for considering including a forestry component in mining companies' legacies in order to address social, economic and environmental goals simultaneously.

Forestry-based legacies could potentially support the sustained success of forest rehabilitation programmes, improve community relations and wellbeing and mitigate climate change. However, as outlined in the preceding section there are some key risks that could present themselves to mining companies and policy-makers, as well as communities.

If the response to these risks is to run the schemes like 'hard conservation', then communities could become further alienated and marginalised. Care therefore needs to be taken to make communities genuine partners in decommissioning decision-making. One possible way of increasing community support for such schemes is to offer them a choice, or a suite of legacy options. Implementing schemes through an appropriate NGO might also improve chances of success and help alleviate issues of (mis) trust. Some suitable NGOs in Ghana would refrain from partnering with mining companies on the basis it might damage their own reputation. Therefore, creating a broadly acceptable partnership, like many aspects of the proposed schemes, could prove far from straight-forward.

While the risks and challenges are formidable, the broad benefits that might accrue from forestry-based legacy schemes mean the concept warrants further attention. In particular, there is the need for a robust estimation of costs and benefits, which can only be undertaken after data on carbon sequestration rates are available and there is more clarity over REDD+ proposals. Additionally, an initial survey of companies' and communities' willingness to engage together on projects could be used as the basis for implementing pilot schemes.

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