THE IMPACT OF EXPANDING ARTISANAL AND SMALL SCALE MINING (ASM) ON SMALL HOLDER AGRICULTURE IN WEST AFRICA:

A CASE STUDY OF GHANA

FEBRUARY 2017

Abridged Report
1. Introduction

The importance of ASM and smallholder agriculture to rural, national and regional economies is well noted. Historically, the two sectors have “peacefully” subsisted side by side as important sources of livelihoods for rural communities. But the relationship has changed in the last two decades for a couple of reasons. ASM is fast becoming the mainstay of economic activity in rural resource rich communities as agriculture struggles to hold onto its dominance. This has brought ASM into direct and often fierce competition with smallholder farming for land and labour resources. Buoyed by rising price of gold and other precious metals, lands under ASM activities have increased several folds whiles the approach to mining has become more mechanized and destructive, threatening agricultural lands, polluting waterways and the environment. Reports in the media have shown wanton destruction of farms and farmlands to pave way for ASM activities in the countryside. Further, farm labour shortages (especially in communities where ASM activities are widespread) are becoming a reality. For example, the old practice of sharecropping contractual arrangements in cash crop farming is becoming relatively more expensive and less attractive as ASM outbids the cost of unskilled labour, leading to rapid exodus of labour into mining.

The study is motivated by the urgent need to deepen understanding and fill knowledge gaps to inform policy and regulatory reforms in order to better integrate ASM in local economic transformation and to ensure the potentials of ASM activities are realized in an optimal way. The study is particularly useful because of the serious threat that unregulated artisanal mining poses for agriculture. Unlike large scale mining that operates within a concession of land area, the threat of ASM to agriculture lies in its itinerant nature, moving from one location to another, in many cases without reclaiming lands and without restoring waterways of interrupted streams, leaving farmlands unfit for farming for years to come.

At both the regional and continental levels, there is increased focus on dealing with challenges posed by ASM and ensuring that optimal benefits are derived. The Africa Mining Vision (AMV) adopted by Heads of State and Government of the African Union in 2009 and the ECOWAS Minerals Development Policy recognize the relevance of ASM sector and call on governments to deal with challenges arising out of their operations and provide needed support to operators. The AMV calls for “transparent, equitable and optimal exploitation of mineral resources to underpin
broad-based sustainable growth and socio-economic development”. In relation to ASM, the AMV envisages to harness “the potential of ASM to improve rural livelihoods, to stimulate entrepreneurship in a socially-responsible manner, to promote local and integrated national development as well as regional cooperation”. Ghana is in the process of preparing the Country Mining Vision (CMV) to adopt principles in the Africa Mining Vision which requires studies of this nature.

The study is guided by the following goals:

a. Diagnose the current relationship between ASM activities and small holder agriculture in Ghana;

b. Determine whether the two activities can sustainably provide complementary livelihoods in communities where ASM activities are widespread; and

c. Explore the resource-use (land and water) management policies and regulations that can create opportunities for mining without creating adverse long-term impacts on smallholder farming.

The study relied on both secondary and primary data. The secondary data entails a thorough review of the literature on current theories and practices in the ASM sector as well as smallholder agriculture to provide an analytical framework to policymakers and other stakeholders. The primary data collection involved extensive fieldwork through interviews, questionnaire administration and the case study method of analysis to arrive at study conclusions. The field work entailed visits to two mining regions (Upper East and Western) to undertake surveys and conduct interviews with key stakeholders in these regions and in Accra.

The report is organized into four sections. The first section introduces the study, outlines the motivation, objectives and methodology of the study. The second section gives a brief on Ghana and details the situation in Ghana as far as ASM and smallholder farming is concerned, focusing on policy and regulatory regimes as well as overview of relevant government initiatives to deal with the impact of expanding ASM on small holder farming. The third section presents analysis of results from the three case studies, providing additional micro evidence on the subject matter of the study. The final section presents summary and policy recommendations.
2. Policy and Regulatory Overview

In mid-1980s, Ghana embarked on economic adjustment and recovery programs (SAP/ERP) under the influence and guidance of the World Bank and the International Monetary Fund (IMF). One important element of the reform agenda was the reforms undertaken in the mining sector. The decade preceding the reforms had witnessed a steady decline in the mining sector which together with cocoa and timber, was the mainstay of the economy for well over half a century. The mining sector was on the verge of collapse in mid-1980s prior to the reforms which aimed at resuscitating the sector and the economy as a whole. The reforms focused on a range of incentives aimed at attracting investment (largely foreign) in mining and at the same time reducing state participation in active mining to allow the private sector to manage the industry whiles the government focuses on providing the “enabling” environment for the industry to thrive. Another key element of the mining sector that caught the attention of the government and its patrons was the Artisanal and Small-scale Mining (ASM) sector. This was because of the potentials of the sector to provide jobs, income and foreign exchange.

In various policy documents, the government has directly or indirectly given recognition to the challenges of ASM activities and its effects on small-holder agriculture. For example in the Growth and Poverty Reduction Strategy (GPRS 2, covering 2006 to 2009), mining-related issues raised to be tackled included negative impact of some mining technologies, degradation of land, pollution of water and air, and high incidence of mining accidents. Ineffective monitoring and management of illegal mining/small scale mining was also noted in the policy document. Some of the strategies adopted included improved collaboration between sector agencies (especially Minerals Commission, EPA and MMDAs) to deal with illegal mining, as well as controlling the menace of mining (especially illegal mining). The problem has always been the implementation of these policies.

In the subsequent Ghana Shared Growth and Development Agenda (GSDA, covering 2012 to 2013)\(^1\), it was envisaged that environmental management would be decentralized as a means of dealing with illegal mining. This was in view of a major policy objective of reducing the environmental impacts of mineral extraction. Three main strategies were identified to be pursued in achieving the policy objective;

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\(^1\) The document did not offer any assessment of how the implementation of previous medium term policy (GPRS 2) had been, especially in relation to mining.
- Restoration of degraded mining areas, controlling the effects of mining (especially illegal mining), and the pursuit of reclamation and plantation development in areas mined out by illegal miners. This has obvious implications for small-holder agriculture.
- Promoting sustainable extraction and use of mineral resources through diversification of mineral production base of the country.
- Building institutional frameworks for sustainable extraction and management of mineral resources.

Other relevant strategies identified included improving the capacity and operations of small scale mining sector in order to reduce illegal ASM, improving support to ASM operators and exploring mechanisms to encourage increased regularization of legally registered ASM operators. There was also a mention of introducing and enforcing economic instruments for mining environmental management. Further, a new processing equipment (referred to as Sika Bukyia) will be produced for them and operators trained on how to operate them. The subsequent medium term development plan (GSDA2) which covers 2014-2017 also puts emphasis on enforcement and compliance with relevant regulations and guidelines on small-scale mining; and improving technical capacity of small-scale miners to enhance efficiency and sustainability in their operations. While these are laudable initiatives, their implementation have always been a challenge.

Besides initiatives that have appeared in various medium-term policy documents, the government established a revolving credit with a seed capital of US$700,000 to support activities of ASM operators. Though the amount was small in relation to the size of the sector and nature of problem being addressed, recovery has been a major problem and the Minerals Commission has since discontinued the arrangement. However the Commission is still in support of the idea of providing support to licensed ASM operators as an incentive for combating illegal operators. Another important step taken by the Minerals Commission as part of the support to ASM operators was the registration of support service providers. These service providers needed not to be Ghanaian but were allowed to offer various support services to ASM operators including hire or lease of mining equipment and in some cases offer of credit facilities.
The government, established an Inter-Ministerial Task Force (comprising of five relevant ministries) in May 2013 to deal with the challenges that came with the gold rush in 2013. The main objective of the task force was to promote sanity and responsible mining into Ghana’s artisanal mining sector”. The taskforce went out there to halt all ASM activities that were unregulated and seize all equipment being used in those activities. Foreigners who were also found to be working illegally on these mines were also arrested. The scope of the intervention of the taskforce was limited to the activities being undertaken illegally (including people and equipment in use). Sponsors and patrons\(^2\) of such activities who are usually far away from these activities were hardly touched if known.

Some amendments to the Minerals and Mining Act (Act 703) which governs ASM sector in the country, were made which proffered stiffer punishments for those who engage in illegal ASM activities. This was aimed at addressing one of the lapses in the sector where courts adjudicating matters of illegal ASM activities could not provide culprits with a deterrent punishments. In many cases culprits were warned and asked to “go and sin no more”. During the last quarter of 2015, Parliament approved amendment to the Minerals and Mining Law (Act 703), providing for the confiscation of equipment used in illegal small-scale mining activities. The amendment criminalize the engagement of foreigners in small-scale mining activities and makes it an offence for a Ghanaian to engage foreigners in small-scale mining activities.

Currently the government has initiated processes (involving consultations and gap analysis) to develop a Country Mining Vision, to be fashioned from the Africa Mining Vision (AMV). The AMV was adopted by the highest decision making body in Africa (Heads of State and Government of the African Union) in February 2009. It’s main purpose is to address various concerns and challenges in the mining sector across the continent by way of creating circumstances that supports “transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development” (AUC, 2009). A couple of months after the AMV was adopted, the Economic Community of West African States (ECOWAS) followed suit and adopted a directive for harmonizing guiding principles and policies in the mining sector. The ECOWAS has also developed the

\(^2\) These sponsors and patrons (often very influential in the society such as politicians, chiefs and business moguls) are usually in hiding since they hardly come out when their activities are halted, equipment seized and workers arrested.
ECOWAS Minerals Development Policy framework. Both the regional and continental policy initiatives supports the development of a vibrant and environmentally responsible ASM sector. The CMV is expected to adopt various policy prescriptions contained in those initiatives.

In 2014, Ghana’s Cabinet approved the Minerals and Mining Policy of Ghana, the preparation of which begun over a decade ago. The policy aims at enhancing “the development of an efficient, modern and sustainable small-scale mining sector, involving both precious and industrial minerals”. Annex 3 presents measures adopted to be pursued in order to realize the policy goal.

Following the adoption of the policy, two main initiatives have been initiated as at June 2016. The Minerals Commission announced and invited all small scale miners to voluntarily register with their district offices in the first quarter of 2016. This is to provide the Commission information on actual numbers of miners out there (something very difficult to tell with certainty) and to better understand what would be required to get them to operate within the regulatory framework. In the past, the Minerals Commission had very little to do with these miners (often branded criminals for operating outside the law) and advised the public to report such people to the police. This turnaround is quite useful, but the usefulness depends on whether the miners will comply with the directive which also depends on the understanding of the miners on the purpose of such registration. Particularly following the recent treatment meted out to them by the Inter-Ministerial Task Force. This therefore requires of the Minerals Commission to raise awareness on the purpose of the registration and convince the miners that it is in their interest to get registered.

3. Analysis of Case Studies

Introduction
The relationship between ASM and small-holder agriculture is complex, despite the visible devastating effects of ASM on small-holder agriculture and the larger society. To better understand this relationship and in a manner that helps respond to the key questions raised above, three areas where ASM and smallholder agriculture remain dominant sectors of the economies were identified and studied. These areas are as follows:
(1) Talensi and Nabdam Districts, Upper East Region (focusing on food crops); 
(2) Tarkwa Nsuaem Municipality, Western Region (focusing on food crops); and 
(3) Prestea-Huni Valley District, Western Region (focusing on cash crop)

ASM is very dominant in the southern belt of Ghana and is an emerging phenomenon in the northern part of the country (especially in Upper East and Upper West regions). Given the north-south developmental divide that characterize development pattern in Ghana (Al-Hassan and Xinshen, 2009), it was imperative that one of the cases be identified in the northern belt in order to have a better countrywide dynamics. According to Al-Hassan and Xinshen (2009) the developmental divide between north and south has come about largely because of differences in natural resource endowment (southern belt more endowed than northern belt) and difference rainfall patterns (two rainfall seasons in the south and only one in the north).

Further, choice of areas from both the north and south took cognizance of the relevance of land access to mining activities (especially ASM) as well as different regimes and practices in relation to land tenure between the south and the north in the country. The choice of regions from both the north and the south, therefore, provided greater insights into the relationship that exist between ASM and small-holder agriculture in relation to access to land. Finally, given the relevance of both cash crops and food crops in Ghana’s agricultural sector, it was deemed prudent to consider the ramifications of expanding ASM activities on both. Consequently, Tarkwa Nsuaem case study focused on food crops whiles Prestea-Huni Valley focused on cash crop (cocoa).

In all one hundred respondents were consulted for this study. 33 hailed from Talensi and Nabdam districts (18 in Datoko, 9 in Nakpalig-selug and 6 from Nangodi). The remaining 67 were from the Western region out of which 40 were from Ehyireso a predominantly cocoa producing town with fast growing ASM activities, and the remaining 27 from Wassa Simpa a community that has large farmlands of food crops as well as substantial ASM activities. The case study from the Upper East Region (Talensi and Nabdam districts) focused on staple crops, The Western regional case focused on cash crop (Ehyereso) and food crop production (Simpa). Even though farming (37%) dominated as the primary source of livelihood of respondents, 32% of the respondents were engaged in both farming and ASM,
18% were also in the business of farming and trading with 8% of respondents having ASM as primary source of livelihood.

**Talensi and Nabdam Districts, Upper East Region**

Mining in Nangodi (Nabdam District) and Datoko (Talensi District) has relatively long history, with increased intensity over the past two decades. In Nangodi, for example, a German company operated a goldmine in the 1940s (Ghana News Agency, 2014) and there has since been artisanal and small-scale mining activities there. The Germans were preceded by Russian miners who explored the entire Talensi-Nabdam mining belt in the 1930s (Hilson, 2001). According to the Ghana Statistical Service (2014) “small-scale gold mining activity, popularly known as “galamsey” (gather and sell) or “alakpiri” has become rampant” in Talensi, indicating “substantial gold mineral deposit” in the district.

**Tarkwa Nsuaem Municipality, Western Region**

Tarkwa Simpa, where the survey was conducted, is an old town located along the main road from Takoradi to Tarkwa. With a population of a little less than four thousand, it is the fourth largest community in the Tarkwa Nsueem Municipality. The main stay of the economy in this community is mining (artisanal and small-scale), agricultural and trading activities. With somewhat different approach to mining in the community, as compared to the case at Nangodi and Datoko, the case study examined the consequences of expanding ASM activities for small-holder agriculture and the Tarkwa Simpa society as a whole. The municipality has a long history of mining and according to GSS (2014), it is the first place where mining activities started in Ghana. Prior to the arrival of European colonialists, Wassa indigenes were engaged in gold mining, with men involved in extracting minerals from deep pits whiles women and children panned for gold dusts in rivers and streams (GSS, 2014).

**Prestea-Huni Valley District, Western Region**

Ehyireso, where the survey was conducted, is a predominant cocoa growing town in the Prestea-Hunni Valley district of the Western region of Ghana. Prestea-Huni Valley is a popular mining district in Ghana, hosting five major mining companies: AngloGold Ashanti, Golden Star Resources, Aboso Goldfields, Prestea Sankonfa Gold Ltd, and the New Century Mines (Prestea). Over the past decade Ehyireso has experienced significant growth in ASM activities, following the boom in the gold
sector as well as challenges cocoa farmers face in maintaining their farms. Farmers in the town have been very welcoming of ASM activities in order to make substantial one-off gains from compensation despite negative impacts associated with ASM activities.

Production and Labour Structure
The structure of production (both farming and mining activities) is significantly influenced by the climatic conditions of the districts, as the country continues to rely significantly on rains for agricultural activities. Climatic conditions are determined by factors such as rainfall patterns, amount of sunshine, humidity and temperature. Agricultural activities in the country are organized around rainfall patterns and distribution and more intense during raining season whiles mining activities are more intense in the dry season. With southern sector of the country receiving more rains annually (and with two raining seasons), agriculture is more intense in the southern part of the country than it is in the northern part. Influenced by endowment, mining activities are also more intense in the southern belt as compared to the northern belt. In all the three case study areas, production activities are dominated by agricultural activities, accounting for about half or more of all production activities. Agricultural activities in the country as a whole are dominated by small-holder farmers who use basic farm implements such as cutlasses and hoes.

In the case of mining, highly mechanized large-scale operators dominate the sector at the national level (in terms of production), contributing more than two-thirds to national output (down from over 90 percent in early 1990s). ASM activities have increased significantly over the period, in terms of areas under mining, level of production and number of youths engaged. Statistics of both area under mining and youths involved are difficult to obtain, yet, the pollution of virtually all major rivers in the country supports expansion in areas under mining, especially areas in and around river bodies. Structure of labour can be viewed in a number of ways: in terms of participation in economic activities, age, gender or a combination. Given the dominance of agricultural activities in all the study areas, labour force was found to be dominated by farmers and agricultural workers. It was, however, observed that growing number of youths (both male and females) in the study areas were more oriented towards ASM activities than agricultural activities.
Talensi and Nabdam Districts, Upper East Region
In Nabdam, mining and quarrying constitute the second most important economics sector (by employment), providing 3 percent of all jobs in the district (4.3 percent to males and 1.7 percent to females). In Talensi, however, mining and quarrying is the second most important economic sector (by employment), providing 5.2 percent of jobs (6.9 percent to males and 3.5 percent to females). In both districts ASM activities were observed to be on the rise, providing jobs and incomes to people, especially youth with little or no employable skills.

Tarkwa Nsuaem Municipality, Western Region
Agriculture remains the dominant economic sector in Tarkwa Nsuaem, employing almost a third (32.2 per cent) of population beyond 15 years (GSS, 2014). Mining and quarrying is the next dominant economic sector and absorbs a little over a fifth (22.6 per cent) of population beyond 15 years. Thirty-nine per cent of all households identified in the municipality engage in agriculture. Among those households 95 per cent engages in crop farming while 20 per cent rear livestock (GSS, 2014). In terms of climatic conditions and vegetation, the municipality lies in the equatorial climatic zone and is reported to experience the highest rainfall in Ghana, with a double maximum rainfall. Some of the residents interviewed indicated that it rains all year round.

Prestea-Huni Valley District, Western Region
Like the other two study areas, the economy of Prestea-Hini Valley is dominated by agriculture (employing 44.1 percent of the labour force, according to GSS, 2014). Mining and quarrying constitute the next important economic activity (by employment) in the district, with the district hosting major mines such as Aboso Goldfields, Golden Star Resources, Prestea Sankofa Gold Ltd., Tarkwa Goldfields and Anglogold Ashanti Ltd. Along with large scale mines are several artisanal and small-scale miners. Mining and quarrying absorbs 12,156 (18.2 percent) of the labour force in the district. Of the total number of people employed in the sector, over 80 percent are males reflecting greater dominance of males in the mining and quarrying sector.

In the figure below, the importance of agriculture and mining (in relation labour absorption) in the district, as captured during the 2010 population and housing census, is shown. Agriculture is most important in Nabdam where about 85 percent of labour force is engaged as compared to Tarkwa where only 32.2 percent of labour
force is employed in agriculture. At Tarkwa also, the highest percentage of labour force is engaged in mining and quarrying, followed by Prestea (18.2%).

![Figure 2: Labour Distribution Between Agriculture and Mining](image)


The dominance of agriculture reflects in the survey results. Most of the respondents are farmers with 37 out of 39 respondents at Prestea being farmers. In Tarkwa and Talensi, appreciable number of artisanal and small-scale miners was part of the survey, reflecting “legitimacy” of their occupation in the communities. At Prestea (Ehyireso to be precise) ASM operators were difficult to sight in town even though substantial ASM activities were going on there. When we approached one of the areas where mining activities were going on, the miners were very uncomfortable and wanted to run away (thinking we were there to arrest them).

![Figure 3: Respondents' Primary Occupation](image)

Source: Field Work (2016)

Information on main sources of livelihood in the communities was also collected and analyzed in the figure below. Agricultural activities represent a major source of livelihood in the survey communities. Though “only ASM” as a source of livelihood made a showing only in Tarkwa (where a good number of respondents work in ASM sector), an appreciable number of the respondents selected “ASM and Farming” as
major source of livelihood across all survey communities, especially in Talensi and Nabdam.

![Figure 4: Respondents' View of Main Source of Livelihood](source: Field Work (2016))

**Agriculture and ASM: Coexistence, Impacts and Political Economy**

In both policy circles and academia, whether small-holder agriculture and ASM can co-exist is one of the issues that have received substantial attention besides the visible negative environmental impacts associated with ASM. Whether the two can sustainably coexist depends on a number of considerations. Proponents of coexistence point out that historically, these two economic activities have been undertaken together, often by the same people without any threats, such as labour shortages to agriculture or pollution. They therefore contend that the trend can continue, whiles impacts that make coexistence difficult in these days are effectively managed. On the other hand, opponents of coexistence maintain that small-holder agriculture is under constant existential threats, from ASM activities. As such, the two economic activities (even if coexisted in the past) can no longer do so, necessitating separation or a choice between the two. From the survey, it was evident that for some communities, ASM activities must be completely discontinued, allowing small-holder agriculture as the main source of livelihood. However, for other communities, ASM and small-holder agriculture can sustainably co-exist.

**Talensi and Nabdam Districts, Upper East Region**

In Talensi and Nabdam districts, the coexistence between ASM activities and smallholder agriculture can be allowed to continue into the foreseeable future, if authorities would show enough commitment to deal with the associated challenges. More importantly, co-existence would require that relevant authorities collaborate in planning their side-by-side existence in a way that minimizes threats from ASM on small-holder agriculture as well as ensure that the society at large (including small-
holder agriculture) benefits from ASM activities. This does not mean that the environmental consequences produced by ASM there are not serious. However, these consequences are relatively more localized and can be better managed as compared to negative impacts created by ASM in other parts of the country. In relation to impacts on water resources, some ASM activities draw their own water resources from underground reservoirs with water pumps. Nonetheless, a significant number of ASM operators rely on communal ponds and other water bodies for their activities. This calls for the construction of more ponds, and a clear distinction between those that can be used for ASM activities and those that can be used for other purposes such as farming, fishing and domestic purposes.

On the other hand, the relevance of ASM activities as a major growth pole cannot be ignored given the climatic conditions in these districts and therefore the limitations to popular rain fed agriculture. Increased intensity in ASM activities has created opportunities (especially jobs for teeming youths) and therefore remains a very important sector in the economies of Talensi and Nabdam districts. ASM activities are increasingly woven into the social, political and economic fabric in the society, with some local people accumulating a lot of wealth on the back of ASM and growing in influence in the society. Further, some political economy issues such as ASM sector generating increasing number (and values) of economic activities and economic transactions in these and adjoining districts make it difficult to shut down. It is also good to note that patrons of ASM activities are relatively influential in the society and will resist attempts to completely ban ASM activities. Within this context, a carefully planned and implemented coexistence has greater chance of propelling growth and producing greater benefits.

**Tarkwa Nsuaem Municipality, Western Region**

In Tarkwa Nsuaem, small-holder agriculture and ASM have co-existed in the town for centuries. There is therefore a possibility that with improvement in regulatory oversight, the two most dominant sectors in the Tarkwa Simpa Township and the municipality at large can continue to live side by side. Despite the negative impacts produced by ASM and suffered by small-holder agriculture (especially with regards to degradation of land and pollution of water bodies), relying only on one sector may not produce an optimal outcome given the circumstances that the township finds itself. Thus with most ASM operators going deeper underground, and relatively less mining activities in or near major water bodies (as compared with other parts of the
country) the negative environmental impacts produced by ASM are more localized and can be better managed if authorities (central, local and traditional) would show greater commitment and put in the necessary measures such as efficient monitoring committees. Another important political economy consideration is the fact that mining activities lead in income generation and forms the basis of other economic activities (including small-holder agriculture) in the community and municipality at large. This makes a consideration of total ban on ASM activities difficult.

There are different forms in which ASM activities in the community benefit and hurt small-holder agriculture. On the positive side, some of the income generated in that sector is spent on agricultural activities and outputs. But on the negative side, farmlands end up being polluted and destroyed as well as increase in price of farm labour. In Tarkwa Simpa, a common recommendation in various studies as well as the ASM Policy Framework is to reduce intensity of ASM activities and in order to mitigate associated negative impacts by introducing Alternative Livelihood Projects. Since 2014, the state (through the Ministry of Food and Agriculture) had prepared huge tract of land for rice farming, employing over eighty people (many of them from ASM sector). The rice project (though in early stages) is turning out to be a success with many people now looking for opportunities to be engaged by the project (which requires expansion or preparation of additional tracts of land). This project (though not being executed with resources directly from ASM sector) demonstrates that there are avenues where resources from ASM sector (a leading income generating sector) can be invested to ensure that the sector produces more lasting benefits to Tarkwa Simpa Township and the municipality at large. Though most of the workers in ASM sector indicated that part of income earned from the sector is invested in small-holder agriculture and other economic activities such as trading, there is need for further planning by authorities (especially those at the local level) to ensure that additional flagship projects can be established with resources directly from ASM sector.

**Prestea-Huni Valley District, Western Region**

Due to the mining technique adopted at Ehyireso, it is evident that ASM and cocoa farming cannot coexist on the same land. Unlike the North where ASM activities are concentrated in deep underground mining, the technique at Ehyireso is largely based on the surface. The vegetation of the land including cocoa is usually removed first, and then excavators are used to dig the earth up and directed to the Chan Fa
machine for washing. During washing major nutrients in the land that nurtures the growth of the vegetation including cocoa is lost making the land unusable for cocoa farming. From the field observation, cocoa farmers that do not sell off their cocoa farms also experience the negative impact of ASM operations. According to farmers, they are compelled to even negotiate with ASM operators to buy their cocoa farms if their farms share a border with a land that has been acquired for ASM operations. This is because, the water course from lands that are mined are intentionally directed through farms to compel them to sell their farms, because if they don’t the cocoa trees will eventually die off as it does not grow well in water logged areas.

The Ehyireso case has a different dynamics. Unlike in the North where ASM is complementary to small holder farming in many respects, the situation is different in the South (Ehyireso). On the net, ASM does not widen the income generation basket for the community but it rather competes with the main income generation activity which is cocoa farming, for many resources, (land, labour (especially youth) and water) so its impact on poverty reduction is relatively small in the short run but significant in the long term. Indeed whiles ASM generates income for its workers in its short lifecycle it equally deprives other community members of their life time income vis-à-vis the cocoa farms that it destroys. The sustainability of the land for other operations are also severely affected as reclamation of the lands is not done after mining. The Ehyireso Township is surrounded by huge trenches and pits that have become the breeding grounds for mosquitoes. As we toured around the town, we could see the main river that snakes its way out of the town from which the community obtains its water has been polluted by the operations of the artisanal miners, indeed the flow of the river has also been impeded by the miners as heaped debris from the mine site has blocked the water course.

Evidence of Impact of ASM on Smallholder Agriculture in the Study Areas

The impacts of ASM activities on small-holder agriculture take different forms and affect different economic agents. Some of the impacts are centralized (such as pollution of water bodies) whiles others are localized (such as destruction of farmlands, often without compensation). The figure below shows respondents who indicated that they have lost parts of their farmlands to ASM activities over the past three years. The figure shows that about 40 of the respondents lost farmlands to ASM activities over the last three years. Among those who lost farmlands to ASM only 15 indicated that they were adequately compensated with five of them
expecting or yet to be compensated. The rest of respondents who lost farmlands to ASM were not compensated.

<table>
<thead>
<tr>
<th>Options</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash crop</td>
<td>52.5%</td>
</tr>
<tr>
<td>Food crop</td>
<td>40.0%</td>
</tr>
<tr>
<td>both (cash crop &amp; food crop)</td>
<td>5.0%</td>
</tr>
<tr>
<td>Fallow land</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Source: Field Work (2016)

Another major form of impact of ASM on small-holder agriculture that the study assessed regards farmers who are persuaded to sell off their farms to ASM operators. With most of the work done on the farms not directly paid for, estimates of investments made on the farms are usually on the lower side. Further, the consequences of such sell outs on the economy in terms of food security and employment are often not thoughtfully considered.

The respondents were not in unison on the prospect of selling off their cash crop farms to ASM operators for adequate compensation. While 52% were unwilling about 49% were ready and willing to sell off their cash crop farms. Two main reasons were identified by the farmers for their willingness to sell off their farms. The first is low income from cash crop farming, and the second is the relatively high income from compensation. Those that were not willing to sell their farms also cited the high income from cash crop farming and other reasons for their decision. The conversation on the “other” mainly bothered on sustainable livelihoods, many indicated that selling their farms only gives them a one off income as against farming which gives them income annually and preserves the land for future generation.
There are no significant differences in respondents’ willingness to sell off farms their farms with food crops on it. The table below gives details of the willingness of farmers to sell off their food crops.

<table>
<thead>
<tr>
<th>Options</th>
<th>Response</th>
</tr>
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<tbody>
<tr>
<td>Very willing</td>
<td>12.7%</td>
</tr>
<tr>
<td>Willing</td>
<td>30.4%</td>
</tr>
<tr>
<td>Not willing</td>
<td>40.5%</td>
</tr>
<tr>
<td>Not willing at all</td>
<td>16.5%</td>
</tr>
</tbody>
</table>

Source: Field Work (2016)

The percentage of food crop farmers unwilling to sell their land was higher (57%) as compared to cash crops (52%) farmers. Those unwilling were mainly concerned about their livelihood sustainability. Most of them did not own the lands they were farming on; it either belonged to their extended family or the chief of the community. Only 43% of the food crop farmers were willing to sell their land to the ASM operators. Indeed, 71% of the respondents indicated that, the compensation they are likely to get for selling the land is the main reason for selling the land. Some also indicated that, the cost of cutting down food crop is lower than cash crop; this obviously makes it easier to decide on them.

Another area of concern in relation to expanding ASM activities regards attraction of youth (often to the detriment of agricultural activities). Even though positive to some extent (when one looks at the growing joblessness of the Ghanaian economy), the phenomenon presents a major threat to small-holder farming as it results in fierce competition for labour resources, affecting the competitiveness of small-holder agriculture. Respondents unanimously (81%) agreed that the expansion of ASM in the communities has reduced the participation of the youth in agriculture, as ASM outbids agriculture in wages.

The study also assessed positive impacts or contributions of ASM activities to small-holder farming. Though 10% were not sure, 54% of respondent were in disagreement that the emergence of ASM in their communities had helped agriculture whiles 35% were in agreement. Those that agreed with the assertion that ASM activities have positively impacted agriculture in the community cited two main reasons. First, the income from mining provides support to local businesses and secondly, miners create demand for many other economic activities in their communities. Even though 9% contend that the emergence of ASM in their communities.

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3 The percentage of people unwilling is made of those “not willing” and those who are “not willing at all” the opposite is true for the percentage of people willing.
communities had resulted in the loss of livelihoods, 68% were of the opinion that, it had created additional jobs in these communities and 23% believed there hasn’t been any change in employment avenues in their communities.

4. Key Findings and Recommendations (2pages)

Key Findings

**Labour**

It was observed during the cases that both ASM activities and small-holder agriculture are labour intensive. Further, there was a general sense that overtime, the youths in the communities were migrating to urban areas such as Accra, Tema, Kumasi and Takoradi. In view of this, the remaining labour supply is competed for by these dominant sectors. Despite the risks (especially relating to health) involved in ASM activities, many youths were more oriented towards working in that sector than the small-holder agriculture. The reason was simple: ASM pays more than small-holder agriculture. Periodic public education sessions must be organized at the community level to sensitize the youths about the dangers and health hazards in the ASM sector. Owners and operators of mines must also be encouraged to initiate some of these sessions in their organizations for the benefit of their workers. It will also help the owners to put in place proper measures to improve health and safety conditions at their mining sites. This could bring ASM wages down and diminish threats to small-holder farming.

**Land Use**

Like labour, land is intensively used by both ASM and small-holder agriculture. The relationship between ASM and small-holder agriculture from the perspective of land differ from place to place. This difference reflected in the three case studies as well. In Tarkwa Simpa and Upper East Region farmers expressed concern over the extent to which farmlands are being destroyed or degraded by ASM activities. Many mined out areas had not been reclaimed, resulting in ever decreasing cultivable lands. In Ehyireso, however, most of the cocoa farmers were not only discouraged in farming but also showed very little concern (if any) over expanding ASM activities and their implications on cultivable lands. Many of them (out of challenges they face in their farming activities) indicated that they looked forward to ASM operators taking over the farms. Those challenges related to decreasing yields, falling state support to
cocoa farming (in terms of subsidies), and increased input prices (especially fertilizers). But the issue of land use goes beyond concerns by farmers over expanding ASM activities and contracting cultivable lands. At the national level, the use of land for various economic or developmental activities is not well planned. In the mining sector, for example, from certain reserves (especially forest reserves) and water bodies that are closed to mining, most other places are generally open to mining activities. But this is largely not respected by artisanal and small-scale miners.

Environmental Management
Various studies have shown the negative impacts, especially resulting from ASM activities, on the environment. The main agency responsible environmental management is the Environmental Protection Agency (EPA). Prior to obtaining licence from the Minerals Commission, ASM operators must acquire Environmental Permit from the EPA. But with most ASM operators conducting their business without requisite license and environmental permits, the EPA is unable to regulate them. Further, the capacity of EPA in terms of human resources and logistics represent a major challenge that impedes execution of their mandate. Besides, the District Mining Committees that are required by the mining law to be established to support the development of ASM in a sustainable manner are mostly dormant. In all the four Municipal and District Assemblies visited during the survey, these committees were dormant or not operational. The law provides for the membership of the committee and all what is required to get them operational is inauguration.

Recommendations

Increased Public Investment in Small Holder Farming
To encourage farming across the country, government must raise the level of public investment across each level of the agriculture value chain. Investment in input for farming must as a matter of urgency be taken to halt the dwindling fortunes of agriculture. It is important that farmers are consulted on public policy for the sector in order to take their views and also sensitise them on new policies. Though there is room for improvement, policies on mining have comparatively received a wider stakeholder consultation than agriculture. From data collected on the field it was evident that farmers were not happy about government policy to supply farming inputs on cocoa free. The development could be linked to the inadequate consultation that went on before the policy was adopted. The farmers prefer a
different policy where they will be required to meet the government halfway in the financing of farm inputs. Understandably their policy will survive the sustainability test and cover majority of farmer in the supply of farm inputs.

**Increased Linkages of ASM and Smallholder Agriculture**

There is the need for rural economic managers to link ASM resources in rural communities to the development smallholder farming. There are significant resources that flow through these rural economies because of the activities of the ASM operators. Key among these resources include the high financial flow in rural economies and the increasing technological innovation. First, a policy to set up rural banking schemes to mop up the financial resources as a way of channelling excess funds from ASM operators in these communities as credit to farmers will go a long way in promoting farming. This intervention will to a large extent deepen the mutual coexistence between ASM AND smallholder farming as access to credit has for a long time been a significant impediment to farmers. Another front from which coexistence between ASM and Smallholder farming could be garnered is in the technology front. Farmers could organise themselves and strategize to borrow from the pool of technology expert in ASM to advance the mechanisation of their practice.

**Land Use Management Interventions**

The work of the minerals Commission needs to be commended on efforts they have expended so far researching and demarcating lands for ASM activities across the country. However, the lands demarcated for ASM are not enough and the areas explored have not well covered the country. Plans must be intensified to increase the acreage of lands specifically for ASM. The outcome of this policy is to promote a better understanding of land use and also create a more documented coexistence between ASM and Smallholder farming. Rarely will a farmer cultivate cocoa on a piece of land designated for ASM since the chances of cutting the cocoa trees down in the near future is high. One of the causes of the destruction of the lands in mineral rich communities by ASM operators is the uncertainty of, and the extent of minerals in a given concession. Unlike large scale mining companies that expend a lot of resources on prospecting and research on specific areas that contains the minerals, ASM operators’ acts on mere suspicion. They end up digging a lot of trenches arbitrarily across villages and the chances of reclamation is particularly lower when minerals are not found in significant quantities to make up the cost of
reclamation. Government support in terms of taking up the cost of prospecting will go a long way to reduce the environmental menace. There must also be a clear directions on lands designated for farming in Ghana to ward off ASM operators from areas designated for farming.

Greater Institutional and Regulatory Strengthening

The regulatory landscape for ASM needs to be improved. The details need to be updated to suit the current trend of ASM activities. The current law envisaged ASM as still been procured through the century old pick ass and shovel method. However, the production techniques have evolved to include excavators and huge machinery that significantly accounts for the land degradation and the environmental challenges being experienced. These operators need tight regulations and enforcement mechanisms to prevent the untoward environmental challenges that have become associated with artisanal mining. From the fields visited, there appears to be a huge gap between the intent of the regulations laid out in the mining code of Ghana and implementation especially on monitoring of the environmental impact of ASM. The Environmental Protection agency (EPA) together with the district offices of the minerals Commission have been charged with this responsibility. Fundamentally, both the EPA and the Mineral Commission have revealed inadequate resources as the main reason why they are not able to monitor all artisanal mining activities countrywide. A lot of the activities of the EPA is concentrated in Accra with few human and capital resources for their operations in the mining districts. The government must as a matter of urgency increase resources in the management of ASM. Management of the sector must move from what has been dictated on paper to regular inspection of mining sites and training of ASM operators on responsible mining practices.

Greater Involvement of stakeholders in ASM activities

Currently, though the mining code and the EPA regulations is clear on informing affected parties of a mining project, rarely are they followed in ASM operations. The itinerary work of small scale miners makes it difficult to track them. A more proactive approach is to involve chiefs and opinion leaders in the monitoring process since they are the custodians of the land and have first-hand ground information on what goes on in their communities. A relationship that centres on a reporting mechanism between opinion leaders, the EPA, and the district offices of the minerals Commission needs to be created across mining communities in Ghana
to aid the environmental monitoring process to ensure environmental and community safety. Having indicated the above, the creation of the district mining committees in the mining code for ASM activities is a step in the right direction. However, the powers of the committee are somewhat limited and needs to be given some tooth.

Roadmap for Moving Recommendations Forward
In order not to leave the recommendations hanging, the study proposes a stakeholder platform to be initiated by ACET and subsequently handed over to a steering committee to implement the recommendations and drive advocacy for the two sectors. The platform will involve all stakeholder institutions on the ASM-Smallholder farming set up. The objective is to bring passionate likeminded stakeholders together to pursue development of ASM and Smallholder agriculture sustainably in Ghana.