

Environmental Degradation and Small Scale Mining Nexus: Emerging Trends and Challenges in Northern Ghana

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Abstract

Small scale mining especially illegal mining commonly called “Galamsey” has attracted much attention in recent times. This study seeks to explore the emerging trends and challenges of small scale mining in northern Ghana. Using structured questionnaire, key informant interviews as well as in-depth interviews, the study sampled 57 stakeholders from two major mining communities in the Wa East district of the Upper West Region namely; Manwe and Jonga communities via purposive, snowball and accidental sampling techniques. The result revealed that majority of the respondents in the small scale mining in these communities were Ghanaians between the ages of 18 and 40 years although few minors were recorded to have engaged in the practice. The essay concludes that the search for livelihood among rural dwellers influence them to ignore the cultural norms that govern the use of the natural environment as it gradually look normal for people to engage in activities that degrade the environment without caring about the negative repercussions of their activities. Also, weak institutional and regulatory framework as well as poor enforcement of the laws governing illegal mining could have further worsened the battle against illegal mining. The study suggests that though people are culturally sensitive to the use of environment resources, institutions mandated to regulate the operations of mining activities should be strengthened and people appropriately sensitized on the effects that their activities might have on the environment and their own health. The study therefore recommends that licensed galamsey operations should be encouraged and harnessed as a legitimate vocation for local economic development. Finally, alternative livelihood programmes to improve the economic condition of communities should form an integral part of the planning for any mining activity especially Small scale mining in Ghana.

Keywords: Small Scale Mining, Galamsey, Environmental degradation, Cultural behavior, Structural challenges.

1.1 Introduction

Everyone depends on the environment to survive. It is the basis of all development and provides opportunities for people and society as a whole to achieve their hopes and aspirations (Zommers and MacDonald, 2012). Because of the importance of the environment to the sustainability of life on earth, goal seven of the Millennium Development Goals (MDGs) which is critical to the attainment of the other goals is geared towards ensuring environmental sustainability. It is common knowledge that environmental degradation is a phenomenon which has led to climate change. The current pace of environmental degradation in Ghana however, is alarming and begs for research and policy attention. It continues to threaten human well-being, endangering health, physical security, social cohesion and the ability to meet material needs, rapidly disappearing forests, deteriorating landscapes, polluted waters and urban sprawl. It is estimated that the current cost of environmental degradation through forestry depletion, agricultural soil degradation and environmental health damage in Ghana as at 2010 is about 3.7 per cent of Gross Domestic Product (Ministry of Youth and Sports, 2010)

It can be said that several factors give rise to environmental degradation. Some of the causes of environmental degradation can be said to be poverty, lack of access to information and public participation, lack of access to justice, lack of political will and weak institutional capacity, bush fires, poor agricultural practices and illegal or uncontrolled mining activities. Most of the factors causing environmental degradation are man-made or human induced. Yet available literature on the phenomenon failed to clarify whether people damage the environment because they come from cultural orientations that make them inherently environmentally insensitive or due to some structural failures. This study focuses on environmental degradation caused by illegal mining activities in Ghana in an attempt to explore the cultural and structural dimensions to the problem.

1.2 Characteristics of “galamsey” operations or Small Scale Mining in Ghana.

Mining involves the process of digging the earth to extract minerals which are found in it. It is one of the oldest means of survival practiced by man. It has therefore played a very important role in world economic development. There are two methods of mining; surface mining and underground mining. Surface mining, also known as open-pit mining is undertaken when the mineral deposit lies on the surface of the earth. This method is relatively more cost-effective and uses fewer workers to produce the same amount of ore compared to underground mining. When the mineral deposit lies deep below the surface of the earth the underground mining method is used. Mining in general is a capital intensive venture and the risk and rewards are also very high for both the mining companies and communities (Marshall, 2002).

Small scale mining (SSM) has been going on for a long time in Ghana. It was legalized by the PNDC

Law 218, 1989. Small Scale Mining is normally carried out by the concession owner who engages people to dig for the minerals which he buys. Small Scale Mining activities can also lead to pollution of water bodies and soils by mercury. They also sometimes dig their pits indiscriminately. In Ghana, an area of 25 acres is the maximum allowable area that is allocated to each person or group of persons as a concession for small scale mining (Appiah, 1998).

Throughout developing economies with rich mineral reserves, particularly those found in Africa, thousands of the unemployed youth dig for fortunes in an unregulated manner and usually illegally. They normally use any means available to them to mine, irrespective of the effects that their activities might have on their environment and even to their own lives (Harkinson, 2003). Small-scale mining brings several benefits to developing countries, manifested mainly as employment and revenue. Although not capital intensive as compared with large scale mining, small-scale mines require sufficient manpower; labour-intensive small-scale mining operations are economically feasible because investment costs per job can be as low as 10 per cent as those costs in large mining operations. Small-scale mining, therefore, has a major impact on the employment situation in the developing world, especially in rural areas where there are few alternatives (Hilson, 2001). Small-scale gold mining has gained global importance both as a source of subsistence for the poor and as a cause of environmental degradation (Kwesi & Kwasi, 2011).

Anglo Gold Ashanti is the only company which currently operates an underground mine at Obuasi. The other mines are surface mine operations since surface mining is said to be relatively cheaper to operate. Tarkwa - Nsuaem municipal in the Western region according to Akabzaa and Darimani (2001) has the highest concentration of mining companies in Ghana, the West African sub-region and possibly the African continent as a whole. There are eleven (11) large scale miners in Ghana and seven (7) of them can be found in the Tarkwa – Nsuaem municipality.

There are large deposits of both gold and manganese in the area. However, mineral deposits are found all over Ghana. Seasonal small-scale and artisanal mining activities have been coexisting with agriculture and husbandry for centuries in Ghana, but the nature of these mining activities have changed with the entry of large-scale mining companies (The World Bank, 2006). The lure of potential higher incomes in mining does appear to encourage young men in particular to engage in small-scale mining on a more permanent basis. While poverty and the lack of livelihood is a major underlying cause for galamsey activities, it is important to note that significant numbers of rural inhabitants are attracted to artisanal and small-scale mining because of the income and independence resulting from these activities.

Today, the great majority of small scale mining operations are related in one way or another to industrial large-scale mining. Land conflicts between large mining companies and galamsey miners are becoming common (Hilson, 2001). Closed-down underground mines or open pits are attractive targets for galamsey miners because mineral ore in mines that were or are operating are accessible with their artisanal equipments and technologies. Artisanal and small-scale mining treats old waste rock from a previously mined location that is no longer profitable for large-scale producers.

With the sector's economic revival in recent years, suspended operations have reopened and new concessions awarded on lands used by the galamsey operators. The government often ignores the artisanal miners' traditional rights to the land in favor of large companies, to whom it grants legal entitlement; this action makes traditional mining illegal. While the government receives royalties and income tax from large players, thousands of galamsey operators, most of whom rely on their mining for subsistence are gradually forced to leave. Naturally, this negatively affects local communities as the informal mining sector provides important economic sustenance to the local economy (Kapstein and Kim, 2011).

Galamsey miners sometimes encroach on currently operating industrial mines. They hide and go to mine in concessions operated by large-scale companies. Factors influencing the degree of such activities include accessibility to the mines and waste heap, and the degree of the concession owner's policing activities. Large-scale mining companies normally do not to share their concessions with galamsey operators because they the concession owners will be held liable for any environmental harm caused by galamsey activities (The World Bank, 2006). Also, galamsey miners can worsen the environmental situation when they try mining in old or closed mines because efforts at reclamation may never be realized.

It is not very clear which laws pertain to small scale miners, due to the capital intensity involved with these licensees, small scale miners appear to be excluded. The license period varies with the type of mining operation (Pricewaterhousecoopers, 2007). In contrast, a license for small-scale mining is issued by the Minister for Mines or someone authorized by him. The license is only to be issued to Ghanaian nationals aged 18 years or older who are registered by the District Office in the respective area. Application must be made in the manner prescribed by the minister and is to be accompanied by a prescribed fee before they are issued a certificate of registration. Once licensed, a person is authorized to "win, mine a concession and produce minerals by an effective and efficient method and shall observe good practices, health and safety rules and ensure the protection of the environment during mining operations. Although the procedures for granting, keeping and suspending or

canceling mining rights are clearly stated in the laws, enforcement and compliance seem to be a challenge leading to even foreigners getting involved in such mining forms. The time and costs associated with obtaining a license are often beyond what the galamsey operators can afford.

1.3 Causes of illegal mining (Galamsey operations) in Ghana

There is a causal link between poverty and environmental degradation and so many environmental problems result from poverty. Thus poverty accelerates environmental degradation and environmental degradation perpetuates poverty. Therefore, reducing poverty can play a critical role in environmental protection (Human Development Report, 2003). However, Ravnborg (2003) questions the assumption of poverty as the major cause of environmental degradation. In examining five environmentally harmful natural resource management practices in the Nicaraguan hillsides, he demonstrates that the immediate agents of environmental degradation are the rich or commercial farmers and not the poor peasant farmers.

The lure of potential higher incomes in mining does appear to encourage young men in particular to engage in small-scale mining on a more permanent basis. The high rate of unemployment of about 25.6% is also another reason why most of the youth might engage in small scale mining because the formal sector is only able to absorb a limited number of people and the rest have to join the informal sector (Africa Economic Outlook, 2012). With such a high rate of unemployment, most of the youth have to find ways to fend for themselves and this could lead them to go into illegal mining.

1.4 Effects of Galamsey operations in Ghana

Mining is an important economic activity in Ghana, contributing significantly to the country's export earnings, government revenues, and employment. Mineral revenue represented about 4.1 percent in the national GDP and about 9 percent of government revenues, and the formal mining sector employed some 15,000 workers in 2004 (Minerals Commission, 2004). The Minerals Commission estimates that artisanal and small-scale miners, often called "galamsey," might account for an additional 500,000 people.

In Ghana, two forms of mining can be identified; the large scale and the small scale or artisanal miners. Small scale mining serves as both a source of employment for the youth but also a major cause of environmental degradation. The small scale sector employs about 300,000 people who usually use primitive methods in mining that sometimes lead to their death. The large scale mining sector employs very few but highly skilled people using highly mechanized equipment. Artisanal small scale mining is an important source of livelihood for many poor families and is characterized by poor technological practices with significant environmental, social, and health costs, particularly through the use of mercury for amalgamation. The constant exposure to mercury undermines the health of miners and increases medical costs, which further raises the need for and dependency on mercury to extract more gold (UNEP, 2011). A number of studies have observed elevated levels of mercury in the hair, urine, blood, and nail samples of people residing in artisanal gold mining areas. The production of minerals brings income and foreign exchange. Mining companies employ workers who earn income, some of which they spend on domestically produced goods and services. Governments receive tax revenues from mineral production which are available to fund education, health care, roads, electricity supply and other forms of infrastructure development. Mining companies also provide some infrastructure and services to communities by way of corporate social responsibility.

The socio - economic impacts of mining can either be positive or negative (Ahmad et al. 2003). In a quest to maximize the gains from mining, miners sometimes do not pay enough attention to the effects that their activities may have on the environment. The open pit method employed by most of the miners in Ghana is one that can cause a lot of damage to the environment as forest are cut down, arable land is depleted and lands are wasted. The cyanide and mercury used also have consequences for human health and environmental safety (Akabzaa, 2000). Even underground water can get polluted with the extensive use of such toxic chemicals. The uses of heavy machinery in exploiting the minerals also cause dust and noise pollution. Upper respiratory tract infection, malaria and STDs are some of the main diseases associated with most mining towns because of the mining activities and the presence of commercial sex workers in such localities. One other negative behavior mostly associated with mining is the use of illicit drugs by small scale miners which enhances them to work more.

In Ghana, the contaminations of surface and ground water bodies is one of the major effects that small scale and illegal mining have been noted to cause (Dery et al, 2012). Generally mineral exploitation causes environmental damage on a very large scale. It causes deforestation, soil erosion, water pollution and significant air pollution. The environmental impacts of mining are very severe in developing countries, where a large portion of the world's minerals are mined. The areas that mining activities impact on include water management and land use, landscape alteration, quality of air, soil and water, waste treatment, management of biodiversity, economic activities and infrastructure. Accidents related to handling and/or transporting hazardous materials (cyanide solution, mercury, etc.), migration, local employment and community services (health care, education).

Environmental impacts of mining activity in general include deforestation, habitat loss, land degradation, and water and air pollution from waste dumps and tailings disposal. All of these impacts have contributed to poverty by negatively affecting livelihoods and health of the poor. In particular, the spread of toxic metals to the environment has been a major concern. Cyanide is commonly used for the recovery of gold from the ore in industrial-scale hard-rock gold mining in Ghana. Other problems with mining include dust and noise pollution from blasting, and risk of water-borne diseases such as malaria from water collected in mine pits (World Bank, 2006). As surface mining operations become more widespread in Ghana, land-use conflicts are bound to escalate. Surface mining usually requires that huge swaths of land be cleared of vegetation and top soil leading to the loss of soil nutrients. Villagers have often been dispossessed of their farmlands to make way for mining, resulting in loss of livelihoods and traditional community values and linkages. Most chiefs and community members also connive with certain foreign nationals whom they allow to mine in their communities without following the due procedure which normally leads to the destruction of the environment (Appiah, 1998).

There are several challenges faced by small-scale miners. These also pose a great danger to the environment. The activities of the small scale miners may pollute rivers and streams nearby that serve as a source of drinking water for communities that are downstream. The methods used in extracting the minerals sometimes pose a danger to the miners themselves who are constantly killed because they do not follow any occupational safety standards. Most galmsey operators also operate without registering their businesses which means they fall outside the tax net of the government.

Activities of illegal and uncontrolled Artisanal and Small Scale Mining causes a lot of environmental hazards including damage to national assets such as road infrastructure and water bodies. Much as the small-scale mining sub-sector in Ghana is plagued with a number of challenges, production and employment levels as well as the number of licensed operators or concessions are expected to have increased considerably over the years. It has therefore made significant socioeconomic impact on many individuals and communities since it provides both part and fulltime jobs for the people, and in some cases it is the only source of income available to the people. In the rural communities where mining takes place, the activity is also believed to have reduced rural exodus, promoted growth of the local economy and also contribute in reducing poverty.

In addition, the small scale mining operations are useful in basic skill development and contribute to the transformation of unskilled labour into semi-skilled and skilled workers. This is because the barriers to entry are very low in terms of capital needs and formal educational. It therefore offers excellent opportunities for the evolution of indigenous entrepreneurs. In rural areas where other jobs are low paying and sometimes non-existent, small-scale mining is therefore seen as a valuable source of employment.

1.5 Methodology

The study used two (2) purposively sampled communities in the Wa East District namely Manwe and Jonga, these communities were selected because it is a well-known fact that deposits of gold are found in these areas of the Upper West Region of Ghana. Traditionally, they were seen to be farming communities before the discovery of gold in these communities. The study used non probability methods in selecting the respondents. It used purposive sampling to select community leaders such as the Assembly man and the Traditional Chief of the various communities. This is because, these are people who might have engaged with other stakeholders such as the District Assembly and Mining companies who have acquired concessions in their towns. It also showed that they would have very pertinent knowledge about the illegal mining activities in their communities. They had knowledge about who are into illegal mining and where they were carrying out the mining activities. It therefore selected the Assembly member and the chief in the two communities, making a total of four key informants. A further 53 questionnaire were administered to illegal small scale miners in the communities. A total of 57 questionnaires were therefore administered. The data was coded and entered into the SPSS software.

The study used the accidental sampling and snow balling method in the selection of the illegal small scale miners this is because it was difficult to identify those who are into the illegal small scale mining in the selected communities. The researcher contacted the opinion leaders in the selected communities and after interviewing them and administering to them some questionnaire, they were able to direct and lead the researcher to the illegal small scale mining sites. They also explained the purpose of the study to the miners before the researcher gathered their responses by the use of a well-structured questionnaire.

1.6 FINDINGS

Nationality

The study sought to find out the nationality of those involved in the illegal mining activities in the communities visited and it came out that all respondents said they were Ghanaians from and from the Upper West Region. However one of the key informants an Assembly member said that he was aware that from time to time a few foreigners come to engage in illegal mining in their community.

Age of respondents

The researcher upon visiting the galamsey sites observed that there were a number of youngsters taking part in the mining process. Most of the minors that were interviewed said they were doing that to earn some income which they will use to buy some of their basic needs. They said they were also schooling and that during the school season, they go to school and it is only when they close from school that they come to partake in the mining activities. When asked about the effects that the chemicals such as mercury used in the mining activities have on their lives, none of them said they were aware of any dangers involved in the chemical use. However, a majority of the respondents were between the ages of 18 and 40 years.

From the study it can be seen that a majority of those involved in the illegal small scale mining are the most active population, which is those within the ages of 18 to 40 years. They constitute about fifty-four percent (54%) of those who were sampled. It could mean that in deed there are no alternative jobs or they are ready to do anything to make a living. The children who are less than 18 years also constitute about 21 percent of those involved in the illegal mining. Such children could end up abandoning school and only concentrating in the illegal mining since they may not see anything wrong with that. Also, when such children grow up and the minerals are completely depleted, they may have to turn to other areas or resources which they may equally destroy. Their colleagues who also see that they are able to acquire certain basic needs may also take to the illegal mining. This will eventually increase the number of young men and women who take part in illegal mining and they may grow up not caring about their environment.

Cultural Behaviour in illegal mining

The study also tried to find out if it were the cultural practice of the people to involve in activities that degrade the environment. It therefore asked respondents why they were engaged in small scale mining activities. It came out that most said they were trying to find a livelihood because the only other thing that they could do was to be in farming and that farming was no longer lucrative. They also said that because farming was a seasonal job and that during the dry season they had no alternative job to do than to do small scale illegal mining. Table 1, shows the reasons why respondents engage in illegal small scale mining.

From the study it can be said that most of those involved in the illegal small scale mining are either not having any other form of employment or are not skilled enough to be engaged in other employment. This is can be seen by the number of respondents who said they were into illegal mining so as to gain some form of income. It is believed that if there is a decent job which pays enough, people will rather do that job than one which was so risky as illegal mining. Over 80% of the respondents said they were into the mining to make a living and almost 40% said they were unemployed and that was the only sector they could go into to find something doing. It also goes further to show that there is a high level of rural unemployment in the country. The number of people in the rural areas who are not employed seem to be on the ascendancy as most of the youth are no more ready to take up farming which has been the major source of employment to the rural youth.

Legal Status of Galamsey operators

From the study, it was realized that none of those engaged in the small scale mining activities were operating with a license and that means that they were indeed illegal miners since they were not given a permit or a concession to mine. These people it can be seen operate anyhow causing harm to the environment since they do not put any measure in place to even reclaim the mined lands.

Knowledge about Uses of the environment

They also agreed that the environment was beneficial to all living things since they get their food from the land. Some said they farm (both crops and animals) on the land, others said they get their water from the land and others too said they build their homes from the land. They also said they get their source of energy for heating and lighting from the environment, minerals are also derived from the environment and they also get certain medicines from the environment in which they live. It is therefore clear from the responses that they were aware of the importance of the environment to their current and future survival.

It is clear from the study that those involved in the illegal small scale mining are all aware of the usefulness of the environment to life. Yet it is surprising that most of them still engage in practices that deplete and destroy their environment. The mentioned food, water, shelter, energy for lighting and cooking, medicine and minerals as benefits they derive from the environment. These are all basic needs of life and it is surprising that they know their activities destroy the environment yet they still continue mining.

Knowledge of the Effects of Illegal Mining on the environment

It was revealed from the study that those involved in the illegal small scale mining activities were also aware that mining affects the environment negatively. They went further to mention pollution of water bodies, destruction of the plant cover and deforestation, destruction of farmlands and loss of minerals. The respondents all said it was not their culture to destroy the environment. They rather said their cultural practices protect the environment from being destroyed. For instance in one of the mining communities, they said it was a taboo to go to the farm on a Friday. It was also a taboo to cut down certain trees such as the baobab, shea and dawadawa. There were also certain areas where it was prohibited to farm on and that those who tried to defy these customs paid dearly

for it sometimes even with their lives. There were also practices that encouraged the planting of trees. It can therefore be seen from the study that the culture of the people is against the destruction of the environment and that it rather attempts to protect it from destruction. However, the question remains as to why they no longer observe their taboos and also disregard their cultural practices all in the name of earning some income or finding employment. Respondents also said if their cultural practices and taboos could be sustained, it might help protect the environment from the adverse effects of the mining activities. However, they said people now go against these taboos and cultures because of the need to survive. They also said the human life was more important than these taboos and cultures and people would do anything to survive even if it is just for a while. One of the young men interviewed said *“whether I do illegal mining or not, I will die one day. So it does not matter what happens as far as am able to get something to eat and also take care of my siblings”*. Most respondents were however quick to add that, if they the small scale miners could develop the habit of refilling the land that has been mined, they believe it would minimize the effect of their activities.

Structural Implication of Galamsey Operation

Understanding and Implementation of the mining laws

All those sampled for the study said they were aware of the government’s laws that govern mining of all minerals in the country. An opinion leader in one of the mining communities said *“all minerals belong to the state no matter where it is found. So no one has a right to engage in mining without the permission of the government”*.

The respondents also said the laws were being implemented by the mining companies that have been given concessions in or around their communities. They sometimes enlist the support of the security forces such as the Army or the police to help evict them from the places that they have concessions. The opinion leaders who try to ensure the people follow these laws are normally tagged as “enemies of progress” by the illegal miners and those who are voted into power such as the Assembly members are threatened with defeat if they should stand for elections again.

Why the laws are not observed

The small scale miners also said they normally do not observe the laws set by the state because they need to survive and the only way left for them is to be engaged in the illegal mining that they do. Some also said that they give their farming lands to the mining companies who do not compensate them enough to look for alternative sources of living. They say their responsibilities are so many and the farming that they used to do is not lucrative enough. The women said travelling to the south to engage in head porting is also very risky for them. They sometimes go to the southern part of the country and by the time they return their husbands marry other women to add to them. Conditions of living in those places are also quite deplorable for them as they do not get any good form of accommodation to live in. they said that is why they resort to the illegal mining to support their children and ensure they maintain their husbands. It can therefore be seen that most marriages in these rural areas are only traditional and not civil making it possible for the men able to marry other women since their culture seem to permit that.

Health Effects associated with Galamsey Operation

They also said that apart from the effects that the mining activities have on the environment it also has some direct and indirect effects on their health. They said they take certain drugs such as Asmadrine, Valium, and Ibucap so that they can either rest after a day’s hard work and also enhance how they work. These drugs they said they were aware also have some side effects which can be detrimental to their health. Some also said they have to smoke cigarette and marijuana sometimes so as to be able to work harder and they were well aware that smoking could be harmful to their health. They were however of the view that they try to persuade the young ones from not smoking and taking drugs to enhance their performance.

Effects of Galamsey Operation on the environment

Some said they felt that it is the use of these drugs that allows them to degrade the environment though they know it is wrong to do so. Another group said they felt it was poverty that drives them to degrade the environment since they have to find ways to fend for themselves and their families. They said if they were to get some other job which is more lucrative than the illegal mining business and also less risky to their health they would prefer such jobs. However, for lack of certain skills they seem unemployable in the labour market. Most of them have no vocational training or skills that can take them out of the illegal mining business.

1.7 CONCLUSIONS AND RECOMMENDATIONS

The essay concludes that small-scale mining in Ghana is beset with environmental, occupational health and operational constraints and addressing them would help promote small-scale gold mining as a socially and economically viable activity in the country. It can be seen that as long as mineral deposits occur in Ghana, and as long as unemployment exist among the youth, then galamsey operations will continue to exist. Culture evolves over time and it might gradually look normal for people to engage in activities that degrade the environment without caring about the negative repercussions of their activities. It is therefore an urgent need for alternative

sources of income to be developed and provided for such people and people have to be appropriately sensitized on the effects that their activities might have on the environment and their own health.

The way forward for Galamsey operations in Ghana

Since the current manner in which it is being carried out does not seem to guarantee any good ending for both current and future generations. Galamsey operators should be brought together under an umbrella group which would help sensitize them on the environmental impacts of their activities. Also better modes of operations and practices should be used to help preserve and protect the environment.

Licensed galamsey operations should be encouraged and harnessed as a legitimate vocation for local economic development. Through this, revenue can be generated for the state through the taxes that it will receive from registered galamsey operators. Illegal Mining on the other hand is a menace and should not be countenanced in any form.

Government should have a policy on Artisanal and Small Scale Mining and make it key in its economic agenda. Government and regulatory agencies should strictly enforce the law which makes mining without license a criminal activity. Government should review and update already existing laws and regulation to make them more relevant to the current needs and challenges of the industry.

Government should completely decentralize the Licensing processes to speed up the processes of acquiring small scale licenses and concessions. Good percentage of royalties accruing to Government should be invested in mining communities in the areas of reclamation and job creation for those involved in galamsey.

Government should emphasize infrastructural development, that is building roads, schools and setting up of industries to provide alternative livelihoods for Mining Communities The Minerals and Mining Act, 2006 (Act 703) Section 83 allows only Ghanaians to be engaged in small scale mining, hence Government and its regulatory agencies should identify non-Ghanaians currently engaged in small scale mining contrary to the law and deal with them accordingly.

The Minerals Commission should do more public education about the laws and operations of the Small Scale mining sector. Government should also continue to ensure the use of appropriate, safe and affordable techniques in small-scale mining. The rights and interests of landowners and local communities regarding benefits accruing from the use of land should be guaranteed during the entire mining process.

Small-scale mining should be recognised as a significant contributor of rural livelihoods that has the potential to alleviate poverty and be a tool for sustainable development. However, adequate technical, financial, economic and organizational assistance or support should be provided to enhance small-scale mining operations in Ghana.

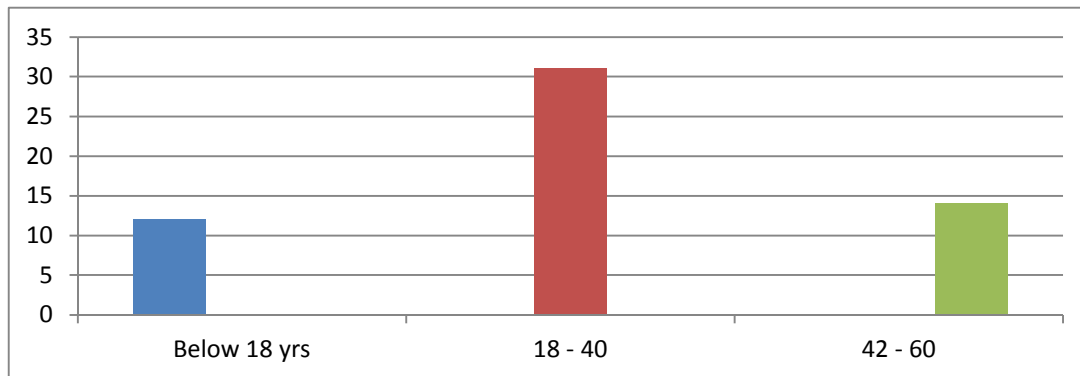
Alternative livelihood programmes to improve the economic condition of communities should form an integral part of the planning for any mining activity especially Small scale mining in Ghana. As much as possible small scale mining should be reserved for nationals and measures should be put in place to improve the sector. Since the Public agencies charged with the responsibility of regulating small scale gold mining seem to be ineffective, the need to search for alternative approaches is crucial.

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Figure 1: Age of Respondents.



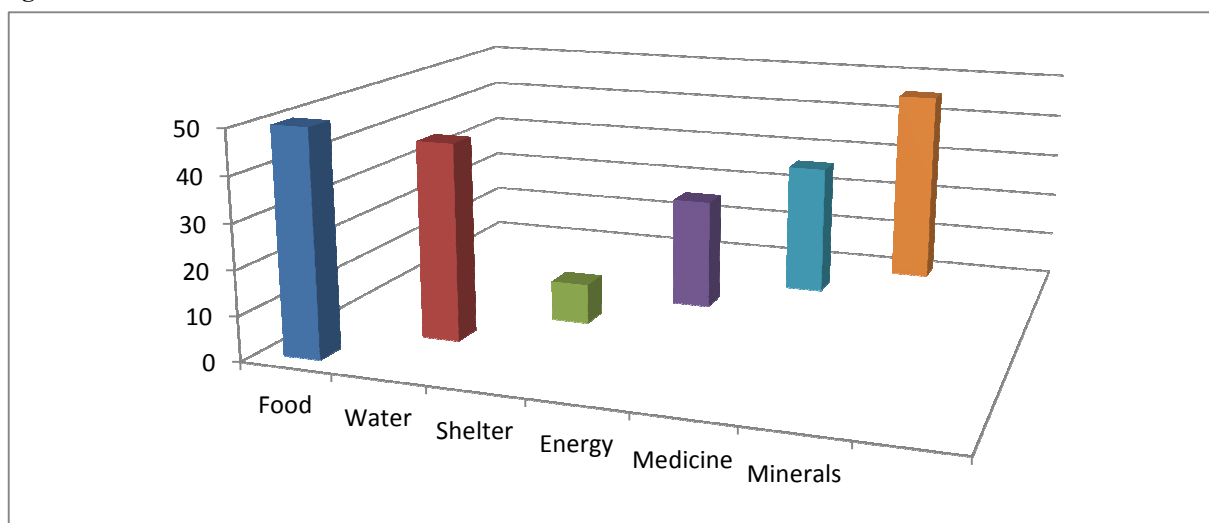
Source: Authors Field Survey, August 2014

Table 1: why are you into illegal mining?

Response	Frequency
To obtain income	46
Unemployment	22
Hardship	17
It is better than armed robbery	3
To support my spouse	4

Source: Authors Field Survey, August 2014.

Figure 2: Usefulness of the environment



Source: Authors Field Survey, August 2014.