Original Research Article

Mining The Cocoa Tree In Osino Community, Ghana

Abstract

This paper throws it weight to other writings on mining and livelihood. It assessed the operational activities involved in illegal small scale mining and how it affects cocoa farmers' livelihood with specific reference to a community in Ghana. A qualitative approach was adopted and the research design was a case study and largely descriptive. Primary data was culled from 35 respondents including affected cocoa farmers, miners and some key stakeholders. It was supported with reports and online publications. A purposive sampling technique was used to identify respondents. Focus group discussions, key informant interviews and observations were used in collecting data. Afterwards, a content analysis was done on the text and image data generated. Results were presented and discussed under appropriate themes. Results from the findings showed that cocoa farming was the main source of income for people in the community but unfortunately their farms were destroyed and this had had a ripple effect on their livelihood. Again, farmlands were not seized for illegal mining activities; rather it was bought and paid for under compelling circumstances. It was concluded that, both commodities contributes to the nation's development; hence one should not be substituted for the other, rather, small scale mining should be done in a legal and properly planned manner so not to affect cocoa farmers' livelihood negatively.

Keywords: Small Scale Mining, Cocoa farmers, Illegal miners, Land, Livelihood

1. Introduction

Small Scale Mining is an economic activity that has a dual potential of either helping people improve upon their livelihood or causing more deterioration. It is an activity mandated by law to be done by Ghanaians only per their Minerals and Mining Act 2006. The main mineral that is mined by small scale miners is gold and it is in two folds; legal and illegal [1]. There is governmental support or license for the legal ones whiles the illegal ones commonly known as "galamsey" (a term that is believed to have been coined from the word gather and sell) are the ones whose actions are not supported with any legal backing or law. In Ghana, small scale miners are well known not because of their contribution to the country's gross domestic product but rather, the negative impact their activities poses to the environment and people who

live around places where it happens. Apart from the destruction of the land on which the mineral is, it also has some other socio-economic effects on livelihoods of people who are affected and those within their environs. However, primarily due to little measures in place to deal with this growing trend, many illegal small scale miners continue with this act. One group of persons who are heavily affected by activities of these miners are cocoa farmers.

Cocoa is one of Ghana's most essential export crops that play a giant role in the agricultural sector and Ghana's economic development. In most households that produce cocoa, the commodity accounts for over 67% of income generated by their household [2]. The cocoa industry for instance in 2009 accounted for about 9% in terms of gross domestic product to the country [3]. Nevertheless, the entire chain of producing cocoa involves significant risks. The fact that cocoa cultivation is totally dependent on rainfall constitutes risk [4]. Unfavorable climatic conditions, issues of pest and disease, unstable or fluctuating international price market, and in recent times the issues of small scale illegal mining activities on cocoa farms all poses challenge to the cocoa industry.

In most cocoa growing communities, illegal miners have been reported causing harm to many cocoa farmlands destroying farms and some other crops that support farmers in these communities. This practice is gradually causing great harm to cocoa farmers, their farms and families. Farmers in these communities are usually people who seem to have incomes from their farms as a major source of livelihood. Any attempt to therefore cause harm to their farms has a potential of ripping off their source of livelihood. Although small scale mining supports the Ghanaian economy, the cocoa sector also in diverse ways support livelihoods and has the potential of sustaining economic growth on a long term base if not forever. If good measures are not put in place by responsible agencies, this growing trend could have a trickle-down effect on the livelihood of many cocoa farmers and gold as a resource could be seen a burden instead of a blessing to people in and around this community.

This paper therefore identified the effects operational activities of illegal small scale miners had brought to the lives of cocoa farmers in a community which is also blessed with gold deposits. The paper has two sections, the first part discussed the mode of illegal small scale mining that exists in the community and how the miners get the lands in the first place. The second also identified the various livelihood sources that have been affected as a result of illegal mining and the effects that it has led to. The paper concluded by identifying both commodities as important for national growth and improved livelihood yet one was being substituted for the other in an unfair manner leading to unequal benefits.

1.2 Literature Review

1.2.1 The Nature of Small Scale Mining in Ghana

Ghana's huge mineral wealth is no secret as the country is ranked 10th in terms of gold production on the world stage and second only to South Africa on the African Continent [5]. Minerals that are commonly mined in Ghana include gold, manganese, bauxite and diamond. Yet, gold is the dominant mineral mined, making the country the second largest producer after South Africa on the African continent, with proven gold reserves of about 985 tonnes, accounting for three per cent of global production [6]. Total earnings from the

minerals subsector including small scale gold mining increased in 2012 by about 13.9%, from US$5,062.8 million in 2011 to US$5,768.8 million over but Cocoa exports decreased by 1.5% in total value, from US$2,870.8 million to US$ 2,828.6 million within the same period [7]. Largely, the mining sector contributes to the economy in diverse ways and it is equally an important source of revenue or foreign exchange for the nation just as cocoa is. It creates employment and helps in the development of infrastructure in the country.

Legally, small scale mining is to be done by Ghanaians only and not foreigners but on a maximum of 25 acres of land according to the country's minerals and mining law [8]. It can take place in so many non-restricted places where there are deposits of mineral. However, water bodies, dwellings for human, forest reserves, public insulation areas and where there are high tensions electricity poles are all exempted. It is predominant throughout the country including all other cocoa growing regions except Volta. Not even the presence of a highly productive cocoa tree which serves as a major source of livelihood will deter these illegal miners. Women and children of school going age, who are usually touted as the vulnerable in society are all involved in illegal small scale mining though it poses danger to their livelihoods. It is important to note that there are responsible authorities who have the mandate to steer or regulate the affairs of mining or minerals in the country just like the cocoa industry.

1.2.2 Cocoa in Ghana's Economy

Cocoa as a commodity has been a strong pillar supporting the economy of Ghana since independence and continuous to play a pivotal role in the development of the economy of Ghana. It is the most important subsector being largely responsible for an average growth rate of about 4.6 percent since 2000 and contributed 26.3% of export revenue and 26% of agricultural growth in 2006 [9]. A cocoa cluster analysis recently revealed that it contributes 3.9% to Ghana GDP and about 23% to exports and foreign earning for Ghana [10]. These figures show that, it is not only farmers who depend on earnings from cocoa, but the Ghanaian state as well. In estimates, it employs close to about 60 percent of the national agricultural workforce in the country either directly or indirectly [11]. This is evident that, cocoa production undoubtedly is predominant in the Ghanaian agricultural sector.

In Ghana, Cocoa matures throughout the year but harvesting is done twice a year within the months of October for the main crop and June for light crop. In 2013/14 season alone, roughly 3.2 million tons of cocoa beans representing 73 per cent of world production were produced from Africa and specifically about 18 per cent from Ghana [12]. The complex production process of cocoa involves numerous parties including, farmers, buyers, shipping organizations, processors, and distributors [13]. Cocoa is second only to gold, which first overtook cocoa as the highest foreign exchange earner; a trend which still continues, though faces stiff challenge from the oil sector. Presently, there are a couple of policies that aims to help improve upon production levels. This clearly is a sign of a deliberate attempt on the path of government to consistently help increase production. It is worth knowing that, the future of Ghana's cocoa industry does not only depend on how we can increase production annually but also on how best we can manage the various risks in the entire chain of cocoa production especially the alarming rate at which illegal small scale mining activities is affecting cocoa farmers who are generally

smallholders and have cocoa as their major source of income.

2. Materials and Methods

A qualitative approach was adopted because of the nature of the study and it helped to describe in details and examine the objectives of the study very carefully. The research design that the researcher used under this study was a case study design due to the fact that the study focused on a detailed examination of a particular community [14]. The study investigated the effects of illegal small scale mining on Osino cocoa farmer's livelihood in the eastern region of Ghana. It specifically assessed the modes of operation, livelihood sources and how lands are acquired**.** The author culled data from both secondary and primary sources. Primary data was largely collected from affected cocoa farmers and miners whiles the secondary data used for the study was more of online journals and publications as well as reports. A purposive non-probability sampling technique was used to select respondents for primary data because they had experienced the central phenomenon. In all, the sample size for the study was 35. Out of this, 17 were affected cocoa farmers, 15 were miners, two opinion leaders and an agricultural extension officer. Focus group discussions were used to gather data from these miners and affected cocoa farmers. Key informant interviews were conducted to solicit information from the opinion leaders and the agricultural officer in the community. Four different groups were formed in all for the focus group discussion; two for miners constituting eight and seven respondents and two for cocoa farmers constituting eight and nine respondents. Observations were done as part of the methods for gathering the data. Afterwards, a content analysis was adopted in analysing and making sense out of the text and image data collected. Results were discussed under appropriate themes.

3.0 Results and Discussions

3.1 Demographic Characteristics of Respondents

Results from the study indicated that majority of the respondents were males and contributed to twenty-nine of the total respondent interviewed and the remaining 6 being females. This indicated that both genders had suffered from the impact of mining in the study area, although males had suffered most. It also adds up to suggestions by most studies that males dominate in cocoa farming in Ghana with most women playing a supporting role. In general, respondents had ages ranging from 20-57 years. Eighteen were within 20-30 years and most of them were miners not cocoa farmers. Thirteen of them were within 31-40 and the remaining four were all cocoa farmers of above 50 years, a common trend in modern day cocoa farming in Ghana where the aged dominates. In terms of education, only eleven of the respondents had had some form of education. This included the agricultural officer, seven cocoa farmers and three of the miners whilst the remaining twenty-four were those with no formal education. In general, majority of them were married. All the male respondents were the head of their various households in addition to one woman out of the six who was also the head of her household. This was a true indicator of a typical rural Ghanaian society where males usually dominate as household heads and breadwinners. Thus a reduction in their income means that most of the people who depend on these farmers will have little to depend on.

3.2 Land Acquisition

Every activity just like small scale mining dwells on some natural capitals which are useful for livelihood. From the results, land which is the main natural capital has a dual ownership. Government owe the mineral resource in the ground and chiefs owe the surface right. An interview session with the opinion leaders interviewed confirmed this when he said '*We know that the minerals inside the ground belong to the government but we also know that the land belongs to us, so tell me, what should we do, because our people are hungry and they need money*'. According to some respondents, owners of mining sites contact the chiefs who are the original custodian of the lands to traditionally settle some payments before getting lands to use and are further directed to the current user of the land for further discussion. They attributed the invasion of miners on their farms to the support they got or were getting from the traditional leaders and chiefs. Others also said miners go directly to the landowners without going through the chiefs or leaders of the community to be able to get the land for their operations. A few of the respondents who were miners pointed out that there were some cocoa farmers who sometimes approach them with discussion on their interest in selling their cocoa farms to them for mining. In the view of the extension officer, majority of cases involving miners acquiring farmlands with farmers consent were mostly those farmers with farms along water bodies and usually get flooded during heavy downpour and end up in low production. He also gave the reason of aged, diseased and moribund farms as part of the reasons based on which some farmers sometimes willingly sell off their land.

Thus, land which is a free gift of nature on which their economic activity was undertaken was not under any condition seized from cocoa farmers. Rather it was willingly given out with the exception of some farmers who were in a tight position hence compelled to sell off farmlands. This is in contrast with the assessment of [15] who in his study sought to explain that cocoa farmers' farmlands are seized for mining without their consent. His study failed to recognise that there are some group of farmers who willingly give out their lands to these miners due to certain reasons. As said by one farmer, '*it is only a few farmers who because of quick money give out their lands willingly to these miners'*. Anytime such people sell of their farmlands and miners get the opportunity to invade their farms, miners end up destroying a portion of nearby farms as well with the use of excavators. Eventually, these nearby farmers are also therefore compelled to sell it or else their farms would be destroyed with no form of compensation. Farmlands according to most respondents were not reclaimed. Some farmers who had their farms not reclaimed complained that miners were nowhere to be found after getting what they wanted whilst some also suspected miners had intentions of coming back to the lands. It was also observed that, the nature of the farms that had not been reclaimed were so scary that farmers would not visit their farms let alone farming on the remaining farmland. Per the researcher's observation, some miners usually dig the middle part of the farm living parts of the farm difficult to access. By and Large, the pattern of land use was not the best thereby bringing the quality and suitability of the resource for plant or crop growth into question and even when the lands are reclaimed its suitable and fertility again for planting could be in doubt.

4.2 Compensational Packages

There were worries about the kind or amount of compensation given to farmers. In almost all cases money was the only compensational package given. Farmers were of the view that the compensation paid was not enough to offset land loss and has really brought about hardship coupled with some other problems. In some instances, it became very difficult to quantify and measure the level of destruction caused to allow for fair and equitable compensation. Data from the study suggested there were no fixed prices for an acre of land rather; it depended on some factors, including the nature of farm, the likely quantity of gold deposit on the land and the bargaining power of individual farmers. Farmers are sometimes not given anything as compensation despite land loss especially when expectation on the quantity of gold to be gotten is not met though their farms were destroyed. Miners paid it per their own discretion or sometimes bring their own surveyors to quote the price without proper consideration to the farmer, the farm age, production level and the extent of damage caused to farm lands.

3.3 Miners Modes of Operation

Results from the study brought to light that, there are three main modes involved in the process of illegal small scale mining operations and it was not different from findings on modes of operations in most studies. According to respondents, the first mode involves the ones where miners embark on the use of excavators to dig the soil to the layer containing what they described as gold gravels. It is then washed in a carpet-like layer which grabs the particles containing the gold. The gold particles are thoroughly washed with chemicals called mercury, after which the content is sieved to let out the mercury, remaining the gold.

For the second mode, miners who had no money to buy an excavator yet were motivated by some factors to mine were using a two in one machine with a loader at one side and water pump at the other. Water is then pumped very deep into the soil and the loader, gushes out soil particles that contain gold into a blanket or carpet-laid board. They described this as the Chanfan manpower machine method.

After the respondents had described the various processes they used, they made it known that another group of miners exist. For this third group, after the excavator had finished its work of digging the land and had taken the gold bearing gravels it was able to dig, they enter the already dugout holes with shovels and pick axe to also dig for stone bearing gold or gold particles that the excavator could not dig out properly or was left. After the debris or the excavated left over is collected, it is washed in a big round container after which mercury is added to wash out the gold. They called this the 'Matra-makw3' or 'Kolikoli' Method which is a local language in Ga, meaning let us try and see. A respondent in his explanation to this method unequivocally said that, *'master don't think gold cannot be found in those debris, and don't be surprised if I tell you that the debris you see on those mining sites after the excavators had finished digging, still had about 70% of gold particles in it'*. As to how this was true, the study did not ascertain. Regardless of the modes of operation by miners, because their activities is done in an improper and illegal manner, it ends up affecting owners of these farms in a negative way as well as the community at large.

3.5 Livelihood Source of Farmers

Affected cocoa farmers under this study were predominantly smallholder farmers. According to all the farmers, their main and regular source of income that supports their livelihoods had been from cocoa farming all this while but the influx of miners had caused a diminish. Results from the study showed that the average number of bags that they were getting annually ranged from 7-21 bags but they can now only boost of about 4-15 bags. Cocoa production in Ghana as indicated by the agricultural officer interviewed has two seasons; the major and minor seasons which happens around October and March respectively. He was quick to add up that *'this is not to mean farmers only get income from cocoa during this period but rather it is during these periods that they get more of their income especially the major season'*. Farmers indicated that the presence of illegal small scale mining had led to reduction in the annual quantity of bags gotten thereby affecting the income they get from cocoa to support their lives. 12 out of the 17 cocoa farmers interacted with made the researcher know that they are currently not getting more than half of the number of bags they use to get before the invasion of miners in the community. That was a pretty high frequency response and if you have two in three farmers experiencing this, which was close to what was found, then it should be a matter of concern.

Upon taking and destroying farmer's farmlands, some of the farmers who did not have all their cocoa farms destroyed decided to farm on their remaining cocoa farms whiles others opted for some new other jobs with some also jobless according to our respondents. One farmer with frustration written all over his face said *'it would be ideal we continue farming on the remaining cocoa farms, because even if we don't get higher yield like before, we will get our "bush allowance"'***.** Eleven of the farmers interviewed said they had economic trees in their cocoa farms which were fell sometimes for selling and construction purposes.

Not only this but also, farmers said they had some food crops that served as a source of food for their families to support the income they were getting from cocoa**.** Notable amongst it were food crops such as plantain and banana which served as shade for young cocoa. Cocoa farmers had other farms with oil palm, cassava, cocoyam etc. which were mostly sold by these farmers to generate income to support their livelihood. Only a few farmers as of the time of researchers visit had invested the little money they got from the miners as compensation in some lucrative business and trades whilst the rest were depending on some family members and friends as their source of livelihood. Amazingly, respondents said, there were some farmers who had invested the money they received from "galamsey" operators into illegal small scale mining.

All the women under this study also had some form of financial support from their husbands but the vice versa was not recorded under this study. They all had cocoa farms they were working on but were also in some form of petty trade in order to earn an additional income to support their household. Some were selling foods and others had some small shops they were operating. The interviewed farmers revealed that, some cocoa farmers are also involved in the illegal small scale mining business although agriculture is their primary income-earning economic activity. These farmers do this to earn additional income to support their farming and livelihood. Only few of the farmers had work as government workers yet had cocoa farming as their other economic activity because they felt cocoa

farm serves as a generational property for the family. This adds up to already establish facts by some writers notably [16] that, most people in farming communities depend on the informal sector for their livelihood than the formal sector.

4.3 Effects on Livelihood of Farmers

Unarguably, the effects were multifaceted but the primary effect that was identified under this study was the destruction of farmland which had gone a long way to affect farmers' livelihood in diverse ways. The destruction had transformed large tracts of cocoa farmland into mining sites with no sign of reclamation. Cocoa which is ideally to be farmed were now been mined with topsoil of farmland removed and rendering land virtually incapable of supporting cocoa growth. In some cases, miners had also created paths and road with heavy trucks through some farms that were not even their target farms in order for them to get to their concessions. There were some pits in some farms as well and these uncovered pits posed danger especially when rain water accumulates in them. Farmers stood the risk of being trapped to death in the pits with any attempt to go back to these lands to farm.

Apart from the above, the level of pollution made to the water bodies in the community was nothing good to write home about. Whiles some countries are busily protecting their water-bodies; these miners were busily destroying the water bodies in the community with their activities, even though people in the community including miners sometimes use surrounding water bodies. The new colour of the streams and rivers was enough evidence to prove that community member who got their source of water from these water bodies after the pollution now had to pay for other alternative source or commute longer distances before use.

Also, teenage pregnancy and prostitution were on the rise. Miners sometimes entice young ladies with money and even in some cases married women. They end up impregnating some, and in no time will be nowhere to be found according to some of our respondents. A lot of people had also engaged in prostitution rendering services to mine workers as their source of livelihood with its implications for a potential spread of disease.

Again there had been some negative effects on education. Children of school going age from poor homes in the community were attracted to illegal small scale mining in order to earn a living for themselves and even sometimes for their families. Some of these children involve themselves in illegal small scale mining as a kind of part time work to be able to get money to support their education and in the course of doing that, they finally get trapped and fully involved in it at the expense of the benefit they would derive from been educated. One farmer looking at the alarming rate of school drop-out cases pitifully said that, *'gradually if care is not taken, in some years to come, we would have to go hire educated people from neighbouring communities to come manage affairs of our community for us since most of our youth are substituting education for illegal mining'*. There were some parents who also pushed their children into the business of illegal mining looking at successes chalked by others.

It was finally noted that, labour was attracted away from cocoa farming. Some of the natives in the community especially the youth after experiencing growing up poor and seeing their parents struggle to make ends meet had moved to join miners at the

expense of farming in order to make a living. Attention of most of the few youth who were already into cocoa farming had been shifted to mining because of the quick and huge amount of money they get from mining. This made it difficult for cocoa farmers who were mostly not youth and others who needed services of labourers for farm maintenance. A resulting effect was an escalated cost of hiring labourers' for farm maintenance due to the competing use of labour with illegal small scale miners. The ease with which one could get land for farming was now in doubt and the interest for cocoa farming had dwindled due to the fear of future capture by illegal small scale miners. These jobs provided by miners however do not last long to be able to sustain them for a longer period as compared to cocoa farming.

5. Conclusion

Although there were some economic benefits to some of the farmers in the community but in general there was a reduction in cocoa produce which had had a telling effect on farmers livelihoods due to illegal small scale mining. Affected farmers were people who had cocoa farming as their main source of livelihood. The ironical mining of cocoa and loss of farmland had created a situation where farmers had to rely on other new and perceived unsustainable means as a coping strategy. The decision of some farmers moving to join illegal miners even after miners destroying their farms was born out of hardship and no alternative source of income. Generally, illegal small scale mining was not worth more than cocoa to these farmers. In that, harvesting could be done on cocoa farms always and to the foreseeable future unlike illegal small scale mining which had the potential of impoverishing natives. The continuity of the farm as a property for future family generation held more value than the money given as compensation but unfortunately in their cases, farms could no longer be used as property for future generations as wished or even as collateral for credit facilities. Largely, farmlands that were affected were gotten under circumstances beyond farmers control and compensations given them were not enough to offset land loss. In as much as illegal small scale mining is a condemnable act, compensations received by some farmers though few, was enough to offset land loss. They believed their farms were not yielding well as expected, hence a need to give it out to miners due to financial difficulties so they could afford some pressing needs.

All in all, both commodities are major contributors to the countries development; therefore one (gold) should not be substituted for the other (cocoa). Responsible authorities must ensure that small scale mining would be done in a legal and a well sustainable approach so as to ensure mutual benefits. Thus, for purposes of intergenerational equity, there is the need for all stakeholders' to ensure that, small scale mining in communities is done in a more socially acceptable, economically profitable and environmentally friendly manner without repercussion effect on cocoa farmers livelihood.

Ethics

The author obtained all necessary ethical approval from respondents. Consent of respondents was sought for after an in-depth explanation of the rationale behind the research and all respondents voluntarily participated in this work.

Reference

1. Gavin, H. (2001). A Contextual Review of the Ghanaian Small-scale Mining Industry. Retrieved from:

http://www.pubs.iied.org/pdfs/G00722.pdf
2. Kolavalli, S. and Vigneri, M. (2011). Cocoa in Ghana: Shaping the Success of an Economy. Retrieved from:http://siteresources.worldbank.org/AFRICAEXT/
3. World Bank (2011). Ghana - Cocoa supply chain risk assessment. Report No. 77589. Retrieved from: http://documents.worldbank.org/curated/en/151931468151162220/
4. Asamoah M. (2012) Managing Risk in Cocoa Farming. Social Science and Statistics Unit, Cocoa Research Institute of Ghana
5. KPMG Global Mining Institute (2014). Ghana mining Guide. Retrievedfrom:https://assets.kpmg/content/dam/kpmg/pdf/2014/04/ghana-mining-guide.pdf
6. Mad Rush for Ghana's Gold (2013, June). GhanaWeb News. Retrieved from:https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Mad-rush-for-Ghana-s-gold-277199
7. ISSER (2013). State of the Ghanaian Economy in 2012. (Report No. 22)Institute of Statistical, Social & Economic Research
8. The 1992 Constitution of the Republic of Ghana
9. Baah F. and Anchirinah V. (2011). A review of Cocoa Research Institute of Ghana extension activities and the management of cocoa pests and diseases in Ghana. *American Journal of Social and Management Sciences* 2(1), 196-201
10. Boateng A. (2017). Ghana Cocoa Sector At Crossroads: To Transform Or Not To Transform. A Cluster Analysis (Student Project). Retrieved from:https://www.isc.hbs.edu/resources/courses/moc-course-at-harvard/Documents/pdf/student-projects/Ghana%20Cocoa_2017.pdf
11. Asuming-Brempong S., Sarpong D.B., Asenso-Okyere K., and Amoo P., (2006). Labour practices in cocoa production in Ghana (pilot survey)
12. United Nations Conference on Trade and Development (2016). Cocoa Industry: Integrating Small Farmers into the Global Value Chain. Retrieved from: https://unctad.org/en/PublicationsLibrary/suc2015d4_en.pdf
13. World Cocoa Foundation (2014) Cocoa Market Update. Retrieved from:http://www.worldcocoafoundation.org/.pdf
14. Creswell, J.W. (2009). *Research Design: Qualitative, Quantitative and Mixed Method Approaches.* 3ed. London: Sage Publication Limited
15. Yeboah, S. (2014, October 30). 'Crops' or 'Carats'? Interaction between gold mining and cocoa production in Ghana. Retrieved from: http://www.unrisd.org/ystp-yeboah
16. Asamoah M., Owusu-Ansah F., Agyapong D., & Anchirena V. (2013). Insight into the Standard of Living of Ghanaian Cocoa Farmers. Greener Journal of Agricultural Sciences. 3 (5), 363-370