



# Impact of illegal small scale mining (*Galamsey*) on cocoa production in Atiwa district of Ghana

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## ABSTRACT

The mining sector is a very important segment of the extractive sector but has one of the most serious and disastrous environmental consequences; conflicting with the livelihood (especially cocoa farmers) and survival of resident communities. This study was conducted in Atiwa district of Ghana to assess farmer's awareness of small scale illegal mining (*Galamsey*), its impact on cocoa production and livelihoods in the mining communities. Snowball sampling techniques were used. Data collected was analyzed with Statistical Package for Social Scientist (SPSS) software. Descriptive statistics tools were used for the data analyses. The study revealed that farmers in the communities face several challenges from mining activities such as water pollution from excessive use of chemicals, air pollution and land degradation from indiscriminate heavy use of machines. Farmers have also observed early dropping of immature pods, wilting, yellowing of leaves and low yield on cocoa farms closer to mined out areas. Majority of the farmers opined that their engagement in the *Galamsey* activities is as a result of unemployment; desire to get quick money and the fact that cocoa farming is seen as a job or business that does not pay well. The study advocates for a lot of adverts on television and radio to create awareness on the dangers that *Galamsey* poses to the cocoa sector which is the mainstay of the economy and an aggressive land reclamation campaign.

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## INTRODUCTION

Ghana can be considered a relative success story in Africa. Six variables are cited - peace and stability, democracy and governance, control of corruption, macroeconomic management, poverty reduction, and signs of an emerging social contract - to suggest the country's admirable political and economic progress. Gold mining and cocoa are the major sectors of the economy for more than a century now (Moss and Young, 2009).

The agricultural sector (cocoa production) might be the most affected by illegal small scale mining locally referred to as *Galamsey* boom and bust cycle since cocoa is one of the top foreign exchange earners for Ghana.

Given the high social return and pro-poor impact of investing in agriculture, cocoa farming, greater than ever attention should be paid to support the provision of various public goods for agriculture, including feeder roads, research, extension services, water and power supplies, storage capacities, irrigation for smallholders, and safety standards (Moss and Young, 2009).

Cocoa is a tree crop that provides livelihoods for millions of smallholder farmers in over 50 countries across Africa, Latin America, the Caribbean and Asia. It grows best in humid, tropical zones located roughly 10 degrees north and south of the equator (COCOBOD, 2001).

## Cocoa production

The cocoa tree (*Theobroma cacao*) grows only under

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very humid conditions. It needs a climate of humid, warm and preferably constant temperatures between 25°C and never above 35°C. Sufficient rainfall is essential and soil requirements must be humid and rich in nutrients. Its colour depends on variety that is yellow, red or reddish-brown when matured (Wood and Lass, 2001).

During harvesting, only healthy pod should be harvested for fermentation. Diseased pods are discarded. Frequent harvesting may be dictated by pod disease, but, where it is not, long intervals between harvests should be avoided since this can lead to the collection of pods of varying ripeness. It is preferable to open pods by striking them with a wooden batten rather than a machete (Subramanyam et al., 2007).

Global annual production of cocoa has roughly doubled in recent decades, reaching 3.6 million tons in 2009-10 and increasingly concentrated in a handful of countries. Over the last 10 years, Africa has firmly established itself as the leading cocoa supplier. According to the International Cocoa Organization, Africa's production has expanded at an average annual rate of 2.7% since 2000. Much of this growth has come from Ghana, which achieved the largest increase in output (up by 269,000 tons). Farmers across West and Central Africa's cocoa belt now account for more than two-thirds of global production. The International Cocoa Organization (ICCO) forecasts that annual global production will reach 4.5 million tons by 2013 and that this growth will primarily come from West Africa (ICCO, 2010). In 2009-10, Ghana was the second largest producer of cocoa after Cote d'Ivoire, representing 21% of global production (World Cocoa Foundation, 2010).

Cocoa production in Ghana is focused nearly exclusively in the forest agro-ecological zones of the country-Ashanti, Brong-Ahafo, Central, Eastern, Western and Volta Region where climatic conditions are ideal for cocoa production. The earliest cocoa farms were largely established in the southeast. Ever since, the epicenter of production has gradually shifted to the west. By the early 1980s, the Ashanti and Brong-Ahafo Regions accounted for 35.5 and 18.5%, of the total output, respectively. Today, the western region alone supplies 56.5% of the total annual cocoa crop.

## Mining in Ghana

The resurgence in the mining industry in Ghana since 1989 cannot be considered an isolated phenomenon. It is driven by the global paradigm which emphasizes private sector-led development as the engine of economic recovery in developing countries. In these economic programmes, African countries with important mining sectors were obliged to shift their policy emphasis towards a primary objective of maximizing tax revenue from mining over the long term (which remains largely a

mirage), rather than pursuing other economic or political objectives such as control of resources or enhancement of employment. According to the World Bank, this primary objective could only be achieved by a new division of labour where by governments focus on industry regulation and promotion while private companies take the lead in operating, managing and owning mineral enterprises (World Bank, 1992).

Between 1984 and 1995, there were significant institutional development and policy changes to reflect the new paradigm. These include the establishment of the Minerals Commission in 1984, the promulgation of the Minerals and Mining Code in 1986 to the promulgation of the Small-Scale Mining Law in 1989 and the establishment of the Environmental Protection Agency in 1994.

The historical importance of mining in the economic development of Ghana is considerable and well documented, with the country's colonial name -- Gold Coast -- reflecting the importance of the mining sector. Gold dominates the mining sector and Ghana is Africa's second most important producer of gold after South Africa, the third largest producer of manganese and aluminium and a significant producer of bauxite and diamonds (Coakley, 1999).

In addition, inventories of iron, limestone, kaolin, salt and other industrial mineral resources exist but are not exploited on a large scale. From the inception of Ghana's economic recovery policy changes in 1983 to date, the mining sector has witnessed a considerable investment boom and increased production, particularly in gold mining. There has been considerable growth in the number of new mines and exploration companies. The sector has also attracted a significant number of mining support companies such as catering and transport companies, explosive manufacturers and mineral assay laboratories. The sector has increased its contribution to gross foreign exchange earnings and appears to have attracted substantial foreign direct investment funds over the years (Feeney, 1998).

Despite this boom, there is growing unease with regard to the real benefits accruing to the ordinary Ghanaian in the mining communities and to the country as a whole, in the light of the extremely generous fiscal and other incentives given to mining companies under the mining sector reforms. As observed by Feeney (1998), the World Bank strategy is surprisingly silent on measures that might be required to protect the rights of vulnerable segments of the society during the economic transition (Coakley, 1999).

Other relevant factors include the negative environmental impact of illegal small scale mining and the growing redundancies associated with the privatization of state-owned mining companies. Thus, the growing incidence of conflict between mining communities and their chiefs on one hand and illegal small scale mining

companies on the other hand echoes the growing disquiet about the effects on our poor cocoa farmers in the rural areas.

Fears have been expressed by some Ghanaians that illegal small scale mining in Ghana might be a resource curse rather than a blessing. Much has been written of late about the illegal small scale mining in Ghana and the negative impact it is having on agriculture specifically cocoa production. However, this perceived negative impact should not be taken for granted because this has not been the story of other mining-rich African countries. The question that may be asked; "Is Ghana's illegal small scale mining (*Galamsey*) a threat or complement to the cocoa industry?"

This research is being undertaken to provide a record of the views and perception of cocoa farmers, help understand farmer's attitude and serve as a reference source in participatory decision making. Therefore, the following research questions need to be answered:

- Are cocoa farmers aware of illegal small scale mining in the study area?
- What are the socio-economic characteristics of farmers in the study area?
- Do cocoa farmers perceive illegal small scale mining as a complement to cocoa industry?
- Are cocoa farmers ready to lease or release lands for *Galamsey* operations?
- How do cocoa farmers perceive the general effect of illegal mining on cocoa production?
- What are cocoa farmer's recommendations and strategies on how best illegal mining can become a blessing and not a curse?

Adequate knowledge on the impact of illegal small scale mining would benefit the cocoa farmers and the economy as a whole through the following:

- The involvement of the farmers in the research will go a long way to inform them on the impact of illegal small scale mining on cocoa production.
- The research will help the farmer to know the effect of land degradation on cocoa areas.
- This research will contribute to natural resource management by providing concepts, scientific information and applied tools that are valuable to formulating and implementing policies that would support sustainable management of natural resources for cocoa production.
- Furthermore, this research will provide practical models, methodologies, best practices and empirical resource for students, applied researchers in government or private research organizations interested in natural resource management and policy analysis.
- Lastly, the research would also serve as a valuable source of information for anyone seeking to be informed

about the impact of illegal small scale mining on cocoa.

## METHODOLOGY

### Study area

The eastern region is one of Ghana's ten administrative regions. It covers an area of 19,323 km<sup>2</sup>, which is about 8.1% of Ghana's total land area. The region is divided into 21 administrative districts. Atiwa district is named after the Atiwa mountain range that has a beautiful evergreen forest cover. The mountain is again the source of rivers Birim and Densu and a number of streams. There are also attractions like waterfalls, butterfly sanctuary and the mausoleum for the burial of Akyem Abuakwa kings in the forest. The name Atiwa therefore connotes wealth or richness. Kwabeng is the district capital. The district shares boundaries with five districts. These are as Kwahu West Municipal to the north, East Akim Municipal to the south, Birim Central Municipal to the west, Fanteakwa to the east and Kwaebibirim to the south. Other major towns in the district are Anyinam, Sekyere New Jejeti, Abomосу, Kadewaso, Akropong and Asaman-Tamfoe. The district is also a farming area in Ghana and a priority for the inhabitants.

### Data collection

Primary data for the study was collected through the administration of structured questionnaires as well as interviewing some farmers and key informants in the study area. In order to get the relevant respondents (cocoa farmers) for all the stated objectives, purposive sampling techniques were used to select cocoa-growing communities in the district. This is because apart from these communities being cocoa growing ones, *Galamsey* activities are prevalent in them. These communities are Abomосу, Akrofufu, Akwabooso, Asmama, Asunafo, Awenare, Bomaa, Juaso, Kwabeng and Osino. Within each community, ten (10) farmers were interviewed using the Snowball sampling technique. After interviewing each respondent, the researcher was directed by the respondent to the next person (cocoa farmer) that meets the criteria. A sample size of 100 farmers was selected across the communities in the study. The questionnaire used was designed to collect information on the following;

- Personal and background characteristics such as age, education, marital status and number of dependents.
- Farm characteristics.
- Farmer's perception on how illegal mining affects cocoa production in the study area, farm size, farmer's livelihood, etc.
- Farmer's strategies for coping and recommendations

**Table 1.** Distribution of farmers by their socio-economic characteristics.

Characteristic	Frequency	Percent
<b>Sex</b>		
Male	75	75
female	25	25
<b>Age</b>		
18-25 years	4	4
26-35 years	20	20
Above 35 years	76	76
<b>Level of Education</b>		
None	20	20
Primary	23	23
JSS	32	32
SSS	17	17
Tertiary	8	8
<b>Marital Status</b>		
Single	15	15
Married	85	85
<b>No. of dependent</b>		
None	21	21
1-3	13	13
4-7	48	48
8-10	13	13
Above 10	5	5
<b>Age of Farm</b>		
1-5 years	14	14
6-10 years	23	23
11-15 years	25	25
16-20 years	29	29
30-40 years	6	6
Above 40 years	3	3
<b>Farm Sizes</b>		
1-5 hectares	55	55
6-10 hectares	24	24
11-15 hectares	10	10
16-20 hectares	10	10
Above 20 hectares	1	1
<b>Land ownership</b>		
Acquired it My self	27.5	28
Rented	31.4	32
Family land	39.2	40

**Table 1.** Contd.

Characteristic	Frequency	Percent
<b>Cocoa variety</b>		
Amelonado	2	2
Hybrid	60	60
Mixed	38	38
<b>Major source of income</b>		
Farming	85	85
Gov't work	4	4
Business	6	6
Any other work	5	5
<b>Benefit from cocoa</b>		
Pay my kids school fee	36	36
Take care of my self	63	63
Other benefits	1	1
<b>Total</b>	100	100

about illegal mining.

Secondary data was also collected from the Atiwa district Assembly and other relevant institutions and sources.

### Data analysis

Based on the nature of the research and data collected, descriptive analysis was used to pursue the objectives of this research. Statistical tools such as frequency distribution, percentages and means were also used to analyze and describe the perception of cocoa farmers. The results were presented in tables and graphs. Statistical Package for Social Sciences (SPSS) was the statistical tool used to arrive at the results of this study.

## RESULTS AND DISCUSSION

### Socio-economic characteristics of cocoa farmers in the area

Cocoa farming in the study area is a male dominated activity with 75.0% of the respondents being men and 25.0% being female (Table 1). This may be attributed to the exertion of physical energy required in cocoa cultivation.

About 21.0% of the farmers had no dependent, 13.0% of the farmers had 1 to 3 dependent, 48.0% had 4-7 dependents, 13.0% had 8 to 10 dependents and 5.0% had above 10 dependents. This shows that most cocoa

farmers have families to care for.

None of the farmers fell below the age of 18, and about 4.0% of the farmers were in the age range of 18-25 years, 20.0% fell within the age range of 26-35 years, while 76.0% of the farmers were in the age range of 35 years and above. By implication, because of the demographic structure of the study area, older people generally stay in the villages and the younger people go to the cities to find work. This explains why 76% of the farmers are 35 years or more. About 20.0% of the farmers have had no formal education, 23.0% of the farmers had formal education up to the primary school level with 32.0% attaining junior secondary school (JSS) education, while 17.0% of them have had senior secondary school (SSS) education, and 8.0% of the farmers have had tertiary education. The diverse educational standards could somewhat affect farmers' knowledge and the way they look at new technologies (Codjoe et al., 2013). By implication this is so because at the village level, primary and junior secondary schools are more predominant.

About 14.0% of the farmers have their cocoa farms ranging from age 1-5 year, indicating that this percentage of farmers are new entrants to cocoa cultivation in the study area. Hence, they require a lot of information and knowledge in cocoa cultivation. About 23.0% of the farmers have their cocoa farms between ages 6-10 years, 25.0% of the farmers have cocoa farm between age 11-15 years while 29.0% (majority) had their cocoa ranging between 16-25 years. About 6.0 % of the cocoa farmers had cocoa farms ranging from 30-40 year and only 3.0% of these farmers had farms above 40 years in the study area. This shows that, most of the cocoa in the study area are below 40 years and that these farms should be maintained to produce more cocoa instead of other than giving the land to *Galamsey* operators to mine.

The issue of land tenure systems and litigation has necessitated about 55.0% of the farmers having land size ranging from 1-5 ha being the majority, followed by 24.0% having land sizes ranging from 6-10 ha, followed by 10.0% having land sizes ranging from 11-15 ha and 1.0 % having land size above 20 ha. This could also be linked to land ownership system in the study area. About 28.0% of the work on acquired land, 32.0% work on rented lands while 40.0% work on family lands.

Planting hybrid cocoa variety is dominant among respondents representing 60.0%, followed by mixed cocoa (38.0%) while 2.0 % cultivated Amelonado in their farms as a main variety. According to Codjoe et al. (2013), this phenomenon could be attribute to the fact that Amelonado which is the old variety is the old variety of cocoa fading out of the system with the increase in awareness about other varieties of cocoa (for example, hybrid) which are early bearing, disease resistant and early maturing with regards to the Amelonado. This means that farmers would be increasing their productivity

with the hybrid *et ceteris paribus*.

Looking at the major source of livelihood of the respondents in the study area, 85.0% of them use farming as their major source of livelihood, followed by Business (Petty trading) which is 6.0%, followed by any other occupation such as driving, electrician which is 5.0%, and lastly Government work being 4.0%. This shows that farming is the predominant occupation in the study area which is rural setting and should be maintained.

Most of the farmers have a lot of benefits from cocoa production. About 63.0% responded that cocoa farming helps them take care of themselves and their families, 36.0% said it helps them pay their kids' school fees and only 1.0% talked about other benefits like building of houses. For the smallholder cocoa farmers, cocoa contributes about 70 to 100% of their annual household income (Asamoah and Baah, 2003). The cocoa sector employs about 50% of the agricultural labour force in Ghana (Seini, 2002). This means that the cocoa sector should be supported and maintained. Table 1 show the numerical representation of the socio-economic characteristics of the farmers in the communities within the district.

#### **Determination of cocoa farmers' perception of *Galamsey* and its impact on cocoa in the study area**

##### ***Cocoa farmers' awareness of Galamsey operations within the study area***

Figure 1 shows the general view of farmers about their awareness of *Galamsey* within the communities in the study area - 95.1% of the farmers responded "YES", 2.9% responded "NO" while 2% said they have "No Idea". It means that most of the cocoa farmers interviewed are aware of the existence of illegal mining practice the area. This should be taken into consideration by the Government and stakeholders in the cocoa industry.

##### ***Cocoa farmers' awareness about Chiefs giving the land to Galamsey operators***

Figure 2 shows the view of cocoa farmers in the study area about the local Chiefs giving the land out for *Galamsey* operation. From Figure 2, 48.1% of the farmers said "YES" to that question, 12.7 % of the farmers said "NO" and 39.2% said they have "No Idea" about the chief giving the lands out for illegal small scale mining. From the results, most of the cocoa farmers are of the view that chief's or local authorities are mainly part of illegal small scale mining in the study area.

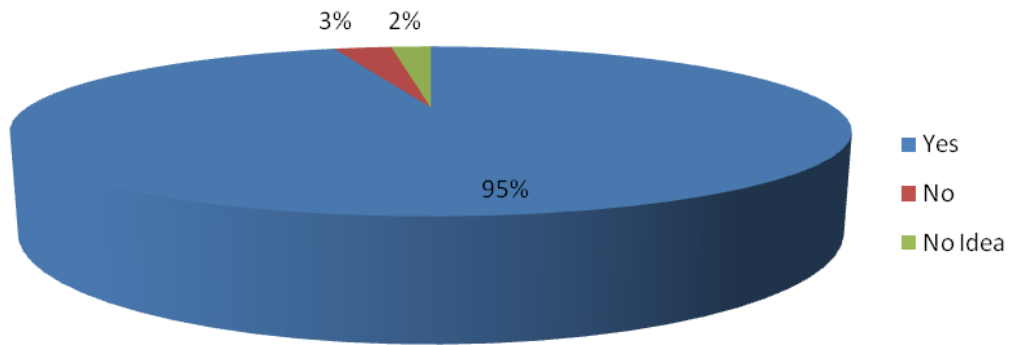


Figure 1. Awareness of respondents about the existence of *Galamsey* in the area.

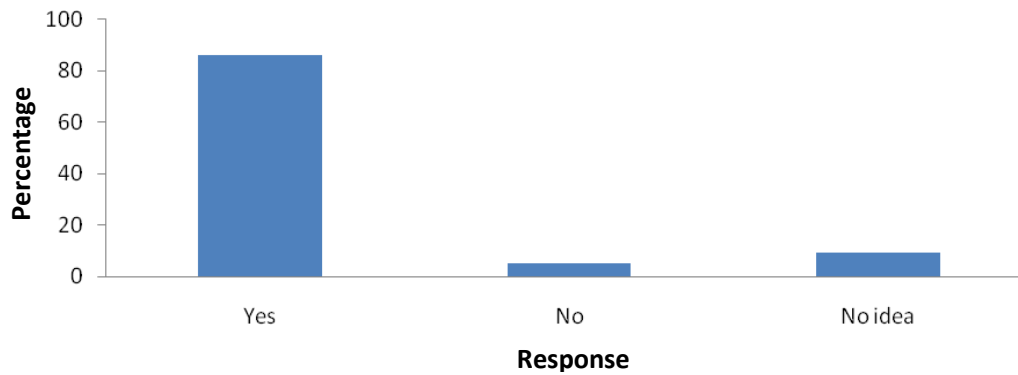


Figure 2. Views of farmers on chiefs giving out farm lands for *Galamsey* operations.

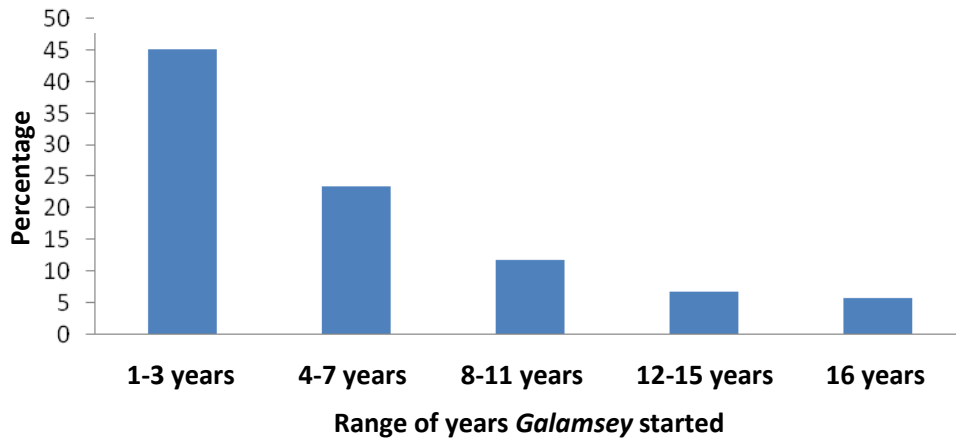


Figure 3. View of farmer on how long *Galamsey* started in the area.

**Farmers’ knowledge about when *Galamsey* started within the communities in the study area**

Figure 3 shows the responses from farmers about how long illegal small scale has been taking place in the study

area. About 45.1% of the cocoa farmers gave range of 1-3 years, 23.5% gave a range of 4-7 years, 11.8% gave a range of 8-11 years, 6.9% gave range of 12-15 years and 5.9% said *Galamsey* has been in the area for 16 years and over. The rest of the respondents were not aware

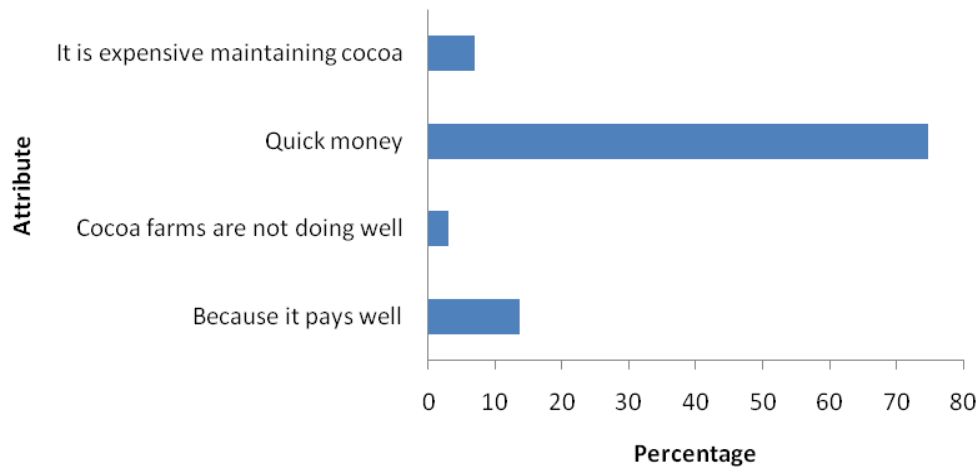


Figure 4. View on why farmers go into Galamsey.

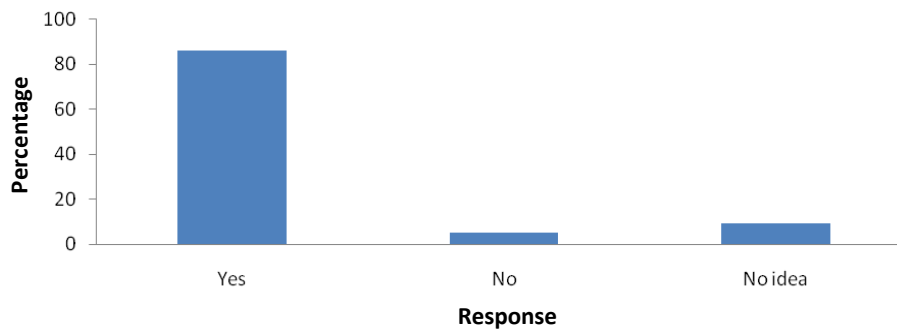


Figure 5. View of farmers on the Galamsey having impact on cocoa production.

and did not know about Galamsey in the study area. This range shows that for the next 30 year, all our cocoa farm lands within the communities in the study area are likely to be turned into illegal small scale mining site which may go a long way in destroying the biotic and abiotic properties. This calls for an eagle eye on Galamsey operations.

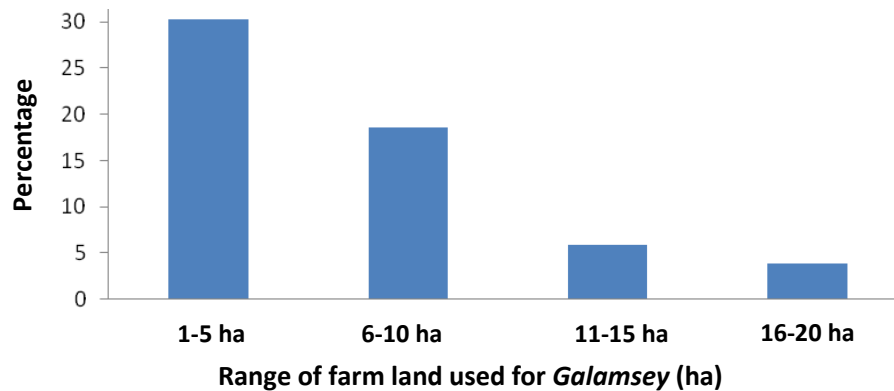
**Respondents views on why the farmers stop cocoa farming and go into Galamsey**

Figure 4 summarizes the responses on why some cocoa farmers abandon their farms and go into Galamsey. The majority (76.4%) of the farmers said it was because of quick money, 13.7% said Galamsey pays better, and 6.9% said it is expensive to maintain cocoa farms and 2.9% of the farmers said cocoa farms are not doing well. The perception of quick money is really a key factor leading to a lot of social vices like child labour and molestation of women and teenage pregnancy. The

government should take a drastic measure to rub away this perception by running more educational programmes to encourage the youth to go into farming as well as caring for farm handed over to them by their aged parents and relatives.

**Impact of Galamsey on cocoa production**

Cocoa is a major source of revenue for the provision of various public infrastructures and an occupation mostly loved by farmers in Ghana and other countries. Cocoa by far has become Ghana’s most important crop. It dominates the agricultural sector and is a major source of income for approximately 800,000 farmers and many others engaged in trade, transportation, and processing of cocoa (COCOBOD, 2001). Ghana’s cocoa sector has staged an impressive recovery in recent years. Ghana can boast of 1,000,000 metric tonnes of cocoa in the 2010/2011 crop year. Figure 5 shows the view of farmers on the impact of Galamsey on cocoa production. From



**Figure 6.** Sizes of farm lands taken by *Galamsey* operators.

Figure 5, the majority (86.0%) of the respondents are of the view that *Galamsey* has had great effect or impact on cocoa production, 5% of the farmers were of the view that *Galamsey* has had no impact on cocoa production, while 9% of the respondent said they have “No Idea” (that is, they are unaware about *Galamsey* having any impact on cocoa production).

The farmers who felt that *Galamsey* have had great impact on cocoa production said; it cause crop loss and also affects their crop yield and income. Crop loss happens when the *Galamsey* operations are then done right in the farm. The cocoa crops are destroyed because of large machines like bulldozers which are used to clear the land in *Galamsey* operations. Loss in crop yield and income normally happens when part of the farm lands are forcefully taken by the *Galamsey* operator from the farmers. Furthermore, when the lands are taken from the farmer, some of the farmers expect allocation of new land in form of compensation which sometime never happens. All these negatively affect the farmers’ output. However, must of the farmers are of the view that they will not abandon cocoa farming and enter into any mining related business like *Galamsey*. This is because they know cocoa has a future for them as well as for the generations unborn.

#### ***Galamsey* impact on cocoa land size**

The Atiwa District is highly degraded with the resultant loss of vegetation cover, fertile top soil and wild fauna species as a result of adverse climatic trends and negative factors influencing environmental degradation such as small scale gold mining (Gyasi, 2006). Desertification and land degradation are two closely interrelated processes. Land degradation refers to the progressive loss of the intrinsic or natural quality of the land and if this process occurs in arid or semi-arid areas, it is called desertification (Gyasi, 2006). The issue of

land sizes comes in when the lands are forcibly taken from farmers and this also has great impact on cocoa yield. Some farmers responded that parts of their lands have been taken. Figure 6 shows percentage of size of farm lands taken by *Galamsey* operators. About 30.4% of the farmers had an average of 1-5 ha of their land by *Galamsey* operators, 18.6% of the farmers also had an average of 6-10 ha taken, 5.9% of the farmers had an average of 11-15 ha taken while 3.9% of the farmers had an average of 16-20 ha taken. On the average, about 50 ha of land have been taken from cocoa farmers in the study area by *Galamsey* operators. This affects the outputs which can later translate into loss of income (Livelihood). Economic trees such as *Funtumia elastica* (Ofuntum), *Alstonia boonei* (Nyamedua), *Pycnanthus angolensis* (Otie), *Milicia excelsa* (Odum), *Spathodea campanulata* (Akuakuoninsuo) in the area are also lost through *Galamsey* operations (Bunso Cocoa College, 1990).

#### ***Impact of Galamsey on the environment***

The farmers claimed that illegal small scale mining also poses some effect on the environment. They talked about issues of water and air contamination, bush/farming burning, death of frogs, birds and fishes (loss of Aquatic lives). According to them all, this has negative impact on cocoa production.

#### **Determination of cocoa farmer recommendation and strategies to deal with *Galamsey***

##### ***Has the farmer participated in workshop concerning Galamsey?***

Figure 7 shows the participation of cocoa farmers in *Galamsey* decision meetings. From Figure 7, about



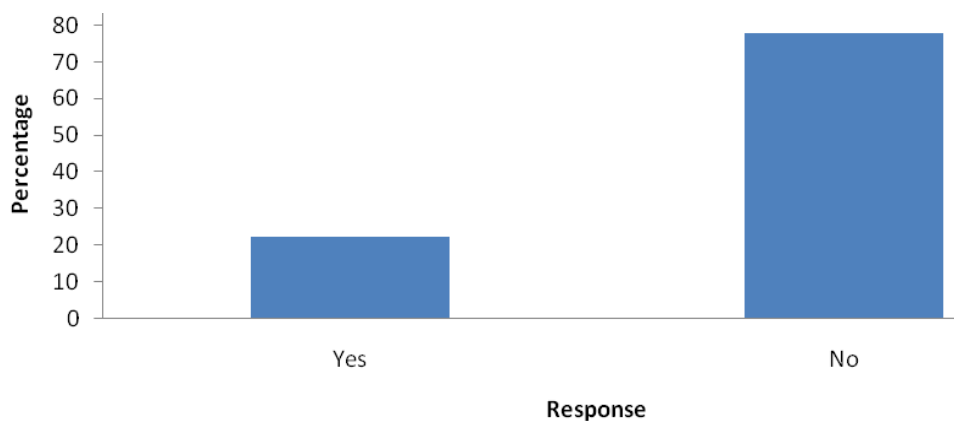


Figure 7. Farmers' participation in decision on Galamsey operation.

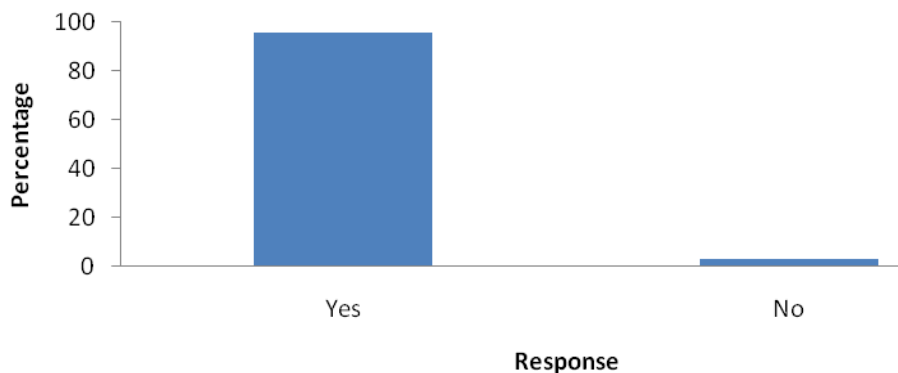


Figure 8. Responses of farmers on their involvement in decision on Galamsey operations.

21.6% of the farmers responded that they have attended meetings, trainings programmes and workshop concerning Galamsey. They claimed they had training through farmer field schools, radio and TV programmes. However, the majority (78.4%) of the farmers said they have not attended any meeting, training programme or workshop concerning Galamsey as stated above. It is therefore important that meeting, training programmes and workshop should be organized to inform all farmers about Galamsey and its effect on their lives.

**Do you think farmers should be involved in decision making concerning Galamsey**

Participatory Learning and Action (PLA) is an approach for learning about and engaging with communities. It combines an ever-growing toolkit of participatory and visual methods with natural interviewing techniques and it intended to facilitate a process of collective analysis and

learning. The approach can be used in identifying needs, planning, monitoring or evaluating projects and programmes. Whilst it is a powerful consultation tool, it offers the opportunity to go beyond mere consultation and promote the active participation of communities in the issues and interventions that shape their lives (Pretty, 1995).

Figure 8 shows the responses of farmers on their involvement in decisions on Galamsey operations. It shows that 97.1% of farmers are of the view that their consent should be obtained on Galamsey issues. Farmers need to be involved in decisions on Galamsey to express their view on the operation. As a result of that, they can help in identifying the hazards and danger that the operations pose on the inhabitants in particular the environment as a whole. Most of these operations are carried out on lands that are very close to their farm. Thus, there is the need for farmers to be involved decision making process. About 2.9% of the farmer's interviewed were of the view that, their concerns are not

considered by the Chiefs before giving the lands out to the *Galamsey* operators. They also claimed that some *Galamsey* operators connive with the chiefs to take over farms/lands belonging to farmers. It is therefore prudent that they partake in such decision making rather than convincing them with money. An acre of land is being bought by the illegal miners for about GH¢ 6,500.

### ***Cocoa farmers' reasons for stopping illegal small scale mining in the area***

Most (91%) of the cocoa farmers said *Galamsey* is a bad practice and should be stopped because it pollute air and surface water bodies and degrades the land. When the water is polluted, the inhabitants are exposed to numerous health risks which can even lead to death. Crops and other plants are lost because of the degradation of the land by *Galamsey* operations. The degradation of the land by the *Galamsey* operators also leads to lost of the forest which means the future generations will suffer the consequences. The pit dug by the *Galamsey* operators are left uncovered and are dangerous to the safety of humans and wildlife. The farmers also allege that some properties such as buildings and farms have been destroyed or lost completely and the flora and fauna are destroyed. Generally, the farmers are of the opinion that *Galamsey* operation is not as sustainable as cocoa farming in the area because of the many disadvantages.

### **Conclusion**

This study considered the perception of cocoa farmers on the impact of illegal small scale mining on cocoa production in the Atiwa District. The study established that most cocoa farmers are aware of *Galamsey* and its multiple effects on their farming activities.

Despite this, efforts made by government and stakeholders have been very minimal in sensitizing and educating the youth and the farmers on the risk involved in *Galamsey*. It is noted that illegal small scale mining (*Galamsey*) has really been the major factor which has affected the production of cocoa due to land degradation, water and air pollution, diversion of water bodies, damages to farm and farm houses etc.

### **RECOMMENDATIONS**

From the foregoing, it is recommended that:

- The government should increase subsidy on cocoa inputs to cocoa farmers to enable them purchase pesticides, fertilizers and the needed farm inputs to help

farmers cope with emerging pest and diseases that have emanated to prevent farmers from selling their land in order to improve production of cocoa.

- Already existing policies and laws concerning *Galamsey* exist however they should be strengthened by involving farmers in stakeholder's decision concerning *Galamsey* so that offenders will be punished to serve as deterrent to others. To achieve this government should provide COCOBOD with structures to be able to function effectively and efficiently to place sanctions on illegal small scale mining.
- Government and stakeholders should intensify educational programme workshop on small scale mining to enlighten the farmers about risks involved in illegal small scale mining and encourage them to stay in cocoa production. This can be achieved through increased television documentary, advertisement, radio programmes and an aggressive land reclamation campaign through the public private partnership (PPP) extension system initiated by Ghana Cocoa Board.

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