

Globally Significant Biodiversity Areas (GSBAs) Designation and their Impacts on Livelihoods: A case study of the Tano Offin GSBA in the Atwima Mponua and Ahafo Ano Districts of the Ashanti Region of Ghana.

Case Study Report, July 2010

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Executive Summary

The contribution of forest resources to the economies of forest fringe communities is enormous. Sustainable access to forest resources by forest fringe communities is imperative. When logging concessions are granted to timber contractors in forest reserves, forest fringe communities may gain Social Responsibility Agreement endowments in addition to their domestic rights to use forests. With permits, fringe communities are also able to harvest resources in forest reserves for commercial purposes. In some cases, where part of the forest reserves are degraded, portions are given to fringe communities for reforestation under different kinds of schemes such as the Modified Taungya System (MTS). Restricting access to the forest reserves by the designation of permanently protected areas such as “Globally Significant Biodiversity Areas” (GSBAs) allows *only* domestic user rights to the forest. This type of restriction poses a great challenge to forest-dependent fringe communities.

The case study, conducted in the Tano Offin GSBA, revealed that the forest fringe dwellers depend substantially on forests for both quantifiable and unquantifiable benefits. The Tano Offin GSBA is one of the three Upland Evergreen forests in Ghana. It includes a wide variety of rare and endangered flora and fauna. With increases in populations in forest fringe communities near the Tano Offin GSBA, farmlands and fallow lands have reduced in size. The continual tilling that this has caused has rendered most lands infertile. The only fertile and productive lands left are the forestlands which are reserved under the Tano Offin GSBA. The lack of permit for harvesting forest resources in commercial quantities in the GSBA has impacted the livelihood security of chainsaw operators, non timber forest product (NTFP) collectors and others. While many of the forest fringe communities do support the idea behind the GSBA concept, there is also the need to provide livelihood security. Individuals in fringe-dwelling communities believe that by protecting the forest, generations unborn will come to benefit, biodiversity will increase and environmental issues will be improved in quality. However, the current livelihood conditions jeopardize this type of protection.

Community requests that surfaced in the study include the granting of access for community members into the GSBA, particularly where the GSBA is the only forest bordering the community. Additionally, members of forest fringe communities see the need to have greater access to agricultural land in order to accommodate their populations. They also request that they be given portions of the GSBA that are already degraded so that they might grow food and engage in afforestation activities through programs such as MTS. Additionally, they request support for the development of alternative livelihood activities. They indicated that education about the importance of the GSBA should be increased to improve understanding about biological diversity and minimize concerns. They want something good to come out of this research as several of such have been conducted with no response.

The recommendations presented at the end of the study report note that, if the GSBA concept is to continue and thrive, the government of Ghana should ensure the following. Education about the concept of GSBAs in communities and its associated consequences should be intensified. Alternative livelihood security and permits for entry into forest reserves must also be provided. The MTS should also continue and spread to more areas. Portions of some forest reserves and GSBAs in Ghana are degraded through illegal means. For admitted communities like Kyekyewere a means of access to the MTS sites should be provided. The Forest Services Division should monitor fringe communities to ensure compliance with acceptable rules, particularly under MTS. There should be re-demarcation of farmlands for forest fringe villages with respect to population size and population growth rate. Communities should be taught conservation agriculture, soil improvement techniques, and other good agricultural practices that ensure higher yields with fewer inputs. Patrolling of the GSBA to guard against illegal activities should be increased as the study recorded cases of illegal activities (chain saw operation, NTFPs collection, farming etc).

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1.0 INTRODUCTION

The importance of forest resources, both locally and globally, cannot be overemphasised. Forest resources provide ecological, environmental, economic, social and other benefits which sustain life on earth. The forestry sector in Ghana is ranked the fourth largest foreign exchange earner in the area of its contribution to the national economy. This foreign exchange is realised from activities from both the formal timber and the informal forestry sub-sectors. Local communities in Ghana particularly those fringing the forest majorly depend on the forest for their livelihoods.

When logging concessions are granted to timber contractors in forest reserves, forest fringe communities may gain Social Responsibility Agreement endowments in addition to their domestic rights to use forests. With permits, fringe communities are also able to harvest resources in forest reserves for commercial purposes.

In the 1970s approximately 18,000km² of rich rainforest existed in the Government of Ghana's gazetted forest reserves. Unfortunately, this is no longer the case. Ghana's forests have been degraded both in size and quality through a combination of over-harvesting of timber, forest fires, encroachment and failed taungya schemes. Currently, more than 25% of the forest reserve block is completely degraded whilst about 8% is under convalescence (Forestry Commission, 2007a). Periodic forest inventories point to a sharp reduction in forest quality, signifying that there is a diminishing forest productivity associated with successive logging. This led to a review of forest management policies. In the 1990s, extensive forest inventories led to the re-designation of some thirty (30) priority areas as "Globally Significant Biodiversity Areas" (GSBAs) due their possession of outstandingly high levels of biological diversity, especially in flora. The concept of the GSBA is to create forest ecosystems that can guarantee that some portions of the forest are preserved in their natural state as much as possible for future generations. The Forestry Commission (FC) of Ghana aims to manage these GSBAs for biodiversity conservation to the benefit of all. As a result, GSBAs are currently under permanent protection.

Unlike the forest reserves system, the designation of GSBAs includes more stringent measures and less access to forest resources. Fringe communities are prohibited from collecting Non-Timber Forest Products (NTFPs) in commercial quantities. Logging is not permitted. They are also not entitled to re-forestation or agroforestry programmes such as the Modified Taungya System (MTS), which allows farmers to cultivate degraded portions of forest reserves with trees and food crops. Under the MTS, farmers are fully entitled to the food crops and receive 40% of the benefits from planted trees. In principle, the government recognises the loss of revenue to fringe communities under the GSBA directive. They are therefore to benefit from other alternative livelihood programmes as may be instituted from time to time (Forestry Commission, 2007b). The alternative livelihood programmes are to add to the global benefits and domestic use rights local communities enjoy from GSBAs. In reality, however, the alternative livelihood programmes are not in place.

2.0 AIM OF THE CASE STUDY

Given the dependence of fringe communities on forest resources, the case study was designed to explore the impacts of the GSBA on the livelihoods of fringe communities. Specifically, the case study investigated:

- The different livelihood activities of the study communities;
- The impacts (both positive and negative) the re-designation of the forest reserve as a GSBA has had on their livelihoods; and
- What could be done to ameliorate any negative unexpected effects on their livelihoods.

As a portion of the Tano Offin forest reserve had been re-designated as a GSBA, it provided a prime case for investigating the impact of GSBA provisions on the livelihoods of surrounding communities.

3.0 SCOPE AND BACKGROUND TO THE STUDY

Out of the 30 GSBA's in Ghana, five were entire forest reserves re-designated as GSBA's and the rest cover part of entire forest reserves (FC, 2007b). The Tano Offin GSBA was used as the study site due to proximity and the presence of an admitted village (a village located within the GSBA) -Kyekyewere. The Tano Offin GSBA is part of the larger Tano Offin forest reserve (Appendix I) which lies in the Atwima Mponua and Ahafo-Ano Political Districts of Ghana in the Ashanti Region. The GSBA is under the management of the Ashanti Region and the Nkawie Forest District branches of the Forest Services Division (FSD) in Kumasi and Nkawie respectively of FC, Ghana, the two political districts and other identified bodies. In total, the GSBA constitutes 178.34 km² (including the admitted village-Kyekyewere) of the entire Tano Offin Forest Reserve (413.92km²). The village (Kyekyewere) and farm land represent 627ha of the GSBA area. Tano Offin GSBA is one of the three (3) Upland Evergreen forest type in Ghana.

Some three rare species including *Guibotia dinklagei* and *Aubregrinia tainsis* (*black star species*) and *Pterocarpus mildbraedii* (*Blue Star species*) were recorded in a floristic survey in some farmlands around the area in 2001/2. With regard to fauna, some important birds identified in the area include the Green-tailed bristle-bill (*Bleda eximia*), Yellow-throated green bulbul (*Cringer olivaceus*), and (*Illaposis rufescencens*). A variety of mammals (including chimpanzees) and reptiles are believed to be present in the reserve.

The case study concerned communities fringing the Tano Offin GSBA and the admitted village- (Kyekyewere), whose main economic activities include agriculture, collection of NTFPs for domestic use and trading. Several communities fringe the GSBA. Kyekyewere has since the designation of the Tano Offin GSBA not benefited from MTS.

4.0 METHODS OF DATA COLLECTION

The general principle behind the case study methodology was to ensure that all activities undertaken were participatory. Due to financial constraints, four (4) fringe communities (Bonkrom, Adadekrom, Mpasaaso No. 2 and Kyirayaaso) were randomly selected together with Kyekyewere for the study. The

North and South division of the Tano Offin GSBA was noted. Communities were, therefore, chosen from both sides. Individual interviews and Focus Group Discussions (FGDs) using checklists (Appendices II, III and IV) were employed. Discussions were held with the Forest Service Division (FSD) on best practices with regard to the GSBA concept. In each community individuals were interviewed, and FGDs held with the different livelihood activities' groups to gather data concerning their livelihood activities. The FGDs was used to validate the data from individual interviews. The data were analysed with the Statistical Package for Social Scientist (SPSS).

5.0 PRESENTATION AND ANALYSIS OF DATA

5.1 Presentation and Analysis of Interview Data

5.1.1 Background of Respondents

Two Hundred and twelve (212) individuals were interviewed. The majority (61.7%) of the respondents were males. Natives and migrants represented 51.9% and 47.6% of the respondents respectively. Sixty-six migrants (66) representing 65.3% came from the Ashanti Region of Ghana. Western and Volta regions recorded 1 respondent each. Since the communities were in the Ashanti Region, the people most likely found it easier to migrate to these communities instead of travelling several distances to other regions. Migrants who had lived in these communities for at least 1 year represented 37.6% (Appendix V). Most of the respondents (67%) had attained middle/JHS/JSS education (Figure 1). It could be inferred that most of the respondents had some form of formal education. Kyekyewere and Kyirayaaso communities fall under the Southern portion of the GSBA and belong to the Atwima Mponua Political District. Bonkrom, Adadekrom and Mpasaaso No. 2 (Northern portion) fall under the Ahafo-Ano District. Table 1 depicts the distribution of respondents from the 5 communities.

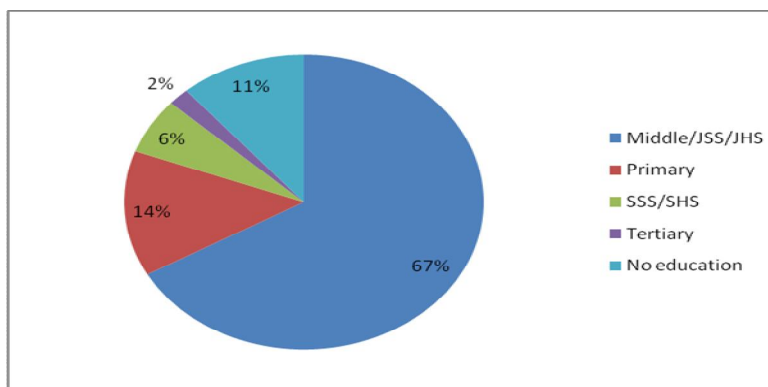


Figure 1: Educational status of respondents

The ages of respondents show that the communities have a lot of youth (70.3%) in the age class of 15-44 (Appendix VI). Most of the respondents (70.8%) are married (Appendix VII).

Table 1: Background of interviewed respondents

Name of Community	Sex		Origin		No education	Educational background			
	Male	Female	Native	Migrant		Primary	Middle/JSS/JHS	SSS/SHS	Tertiary
Kyekyewere	26	11	25	12	2	3	29	3	0
Kyirayaaso	24	29	33	20	9	2	39	1	2
Bonkrom	23	17	7	33	3	11	25	0	1
Adadekrom	29	5	8	26	7	2	19	5	1
Mpasaaso	30	18	37	10	3	11	29	4	0
No. 2									
Total	131	81	110	101	24	29	141	13	4

NB: JHS-Junior High School; JSS-Junior High School; SHS-Senior High School; SSS-Senior Secondary School.

5.1.2 Livelihood Activities of Communities

The livelihood activities (Appendix VIII) are summarised in Table 2. Some people (61.2%) engage in more than one activity. The list is not exhaustive as some inhabitants were out of the communities during our visits. Thirty-nine respondents (18.4%) engage only in farming, whilst 51.4% engage in farming and some other livelihood(s). Before the GSBA designation, 50% of the respondents were working in the study communities (Appendix VIII). Of this, 29.4% engaged only in farming. Farming in addition to other activities (e.g. hunting, carpentry, masonry etc) was pursued by 35.8% of the respondents.

Table 2: Livelihood activities identified in study communities

Livelihood activities	Name of community				
	Kyekyewere	Kyirayaaso	Bonkrom	Adadekrom	Mpasaaso No. 2
Carpentry	Carpentry	Carpentry	Carpentry	Carpentry	Mechanics
Chainsaw operation	Chainsaw operation	Chainsaw operation	Chainsaw operation	Chainsaw operation	Painting
Farming	Farming (farmland, MTS)	Farming (farmland, MTS)	Farming (farmland, MTS)	Farming (farmland, MTS?)	Barbering
Hunting	Hunting	Hunting	Hunting	Hunting	Farming trading
Teaching	Teaching	Teaching	Teaching	Teaching	Hairdressing
Driving	Driving	Driving	Driving	Driving	Cleaning
Small scale mining	Small scale mining	Small scale mining	Small scale mining	Small scale mining	Chainsaw operation
Dressmaking/tailoring trading	Dressmaking/tailoring trading	Dressmaking/tailoring trading	Dressmaking/tailoring trading	Dressmaking/tailoring trading	Sawmilling/logging
Farm labouring	Farm labouring	Farm labouring	Farm labouring	Farm labouring	Canoe carving
Birth attending	Birth attending	Birth attending	Birth attending	Birth attending	Cocoa farm
					caretaker
					Palm wine tapping and alcoholic drink
					(Akpateshies)
					distilling
					Masonry
					distilling
					Bicycle repairing
					Hunting
					Carpentry
					CBAG
					Mass cocoa
					spraying
					Driving
					Revenue collection

5.1.3 Dependency on the non GSBA portion of the Tano Offin forest reserve

The non-GSBA portion of the Tano Offin forests reserve is accessed by 61.8% of the respondents (Appendix IX). Indirectly, the not-so-direct forest dependent livelihoods (e.g. hairdressing, dressmaking, driving, barbering, masonry etc) get into business when the forest dependent livelihoods thrive and the

owners get profits. About 22.2% obtain land from the non-GSBA portion for their activities, 12.7% -NTFPs for domestic use (Appendix X). All the communities except Kyekyewere have benefited from MTS. They however commented that the MTS is not allowed regularly.

5.1.4 Benefits from the Tano Offin GSBA

According to the results of the study, the Tano Offin GSBA provides *nothing* to 68.4% of the respondents (Table 3). The 68.4% gave the reason that they do not enter the GSBA at all. Principally, this was attributed to the fact they had been told not to enter the GSBA for any resources. The 31.6% respondents (those who benefit from the GSBA) were further asked to indicate how they use the resources (e.g. for domestic or commercial purposes), (Appendix XI). The results indicated the sale of NTFPs and timber.

From Table 3 and Appendix XI, it appears the access regulations are unclear to GSBA fringe communities and some issue of illegalities are recorded. This confirms the response from the focus group discussion. Fringe communities can access the GSBA for *only* NTFPs for domestic and not for commercial purposes. No timber is allowed to be logged. This calls for more education about the GSBA conditions. However, the education has to be followed by constant patrolling to guard against residents who would want to advance their reliance for commercial gains.

Table 3: Summary of benefits obtained from the GSBA

Benefits	Frequency	Percentage
NTFPs	30	14.2
NTFPs, environmental/ecological	4	1.9
Timber	3	1.4
NTFPs, timber	3	1.4
Environmental/ecological	26	12.3
Timber, environmental/ecological	1	0.5
Nothing	145	68.4
Total	212	100

5.1.5 Estimated Income from livelihood activities

The average income recorded from respondents (87) who could estimate their incomes before the GSBA designation was GH¢926.1. The average income for the 197 respondents (those who provided their income estimates) since the GSBA designation is GH¢370.56. Ten (10) respondents provided the same incomes estimates before and after the designation whilst a lot more (21) had rather experienced a decrease in estimated incomes. Respondents who have had the opportunity to cultivate some of the adjoining forest reserve attributed their increase in incomes to the bountiful harvest of produce from forest lands. Some chainsaw operators and carpenters, hairdressers, barbers, dressmakers etc could not provide any income estimate due to among others no/limited access to forest resources and low incomes of direct forest related livelihoods. Some respondents had changed livelihoods over time.

For respondents who acknowledged access to the non-GSBA portion of the Tano Offin forest reserve, 32.4% out of 148 respondents who are at least farming have farms in the forest reserve. One respondent *only* from Kyekyewere has a farm in the forest reserve (Appendix XII). Eight (8) out of 21 interviewed chainsaw operators said they obtain timber, 12.5% out of 16 carpenters get timber for their work and 21.4% of 14 hunters obtain game for sale from the forest. All 6 herbalists obtain herbs/medicine for *only* domestic purpose. The situation is not different with the other direct forest related livelihoods.

5.1.6 Impacts of GSBA designation on Livelihood Activities

One hundred and four (104) respondents constituting 49.1% stated some positives impacts of the GSBA designation on livelihoods. These primarily fell under ecological and environmental benefits of forests (Table 4). It could be inferred that the fringe communities obtain enormous intangible benefits compared with tangible/quantifiable benefits.

Forty-two (19.8%) respondents indicated some negative impacts on their livelihoods as a result of the GSBA. The underlying cause of most of the negative impacts stems from the restricted access into the GSBA for land and forest resources. Though, it appears that only a small proportion of the respondents have problems with the Tano Offin GSBA, it was noted that some people access the GSBA illegally to log, farm and harvest NTFPs for sale. The illegal access for resources might have contributed to the small number of respondents commenting on negative impacts. In addition, it could probably be due to the fact that some respondents (22.6%) have access to MTS. Only 1 respondent from Kyekyewere indicated having a farm in the non-GSBA portion of the Tano Offin forest reserve. The data stipulate that 20 respondents from Kyekyewere commented negatively about the GSBA as regard their livelihoods. The categories of impact are summarised in Table 5.

The solutions to the negative impacts are summarised in Table 6. The communities are calling on the Government of Ghana and donors to address the solutions. Thirty-six (36) respondents provided solutions.

The detailed summary of the impacts (positive and negative) and the possible solutions to the negative impacts are presented in Appendices XIII, XV and XVI respectively.

Table 4: Summary of positive impacts on livelihoods by respondents

Positive impact	Number of respondents	Percentage (%)
Ecological	11	10.6
Ecological and Forest Resources	3	2.9
Ecological and protection of resources as future heritage	1	0.96
Environmental	6	5.8
Environmental and ecological	35	33.7
Environmental and ecological and Forest resources	5	4.8
Environmental and ecological and protection of resources as future heritage	7	6.7
Environmental and ecological and income	1	0.96
Environmental and Forest resources	2	1.9
Environmental and protection of resources as future heritage	2	1.9
Forest resources	10	9.6
Forest resources and protection of resources as future heritage	2	1.9
Protection of resources as future heritage	13	12.5
Income	5	4.8

Income, forest resources and good health	1	0.96
Total	104	100.0

Table 5: Summary of negative impacts on livelihoods by respondents

Negative impact	Number of respondents	Percentage (%)
Hardship	1	2.4
Infertile farmland	1	2.4
Lack of access to forest resources	11	26.2
Low income	1	2.4
Land poverty	15	37.5
Land poverty and Infertile farmland	3	7.1
Land poverty and lack of access to forest resources	2	4.8
Land poverty and lack of access to forest resources and infertile farmland	1	2.4
Land poverty, no jobs and lack of access to forest resources	1	2.4
No jobs	2	4.8
Other responses	4	9.5
Total	42	100.0

Table 6: Solutions to negative impacts

Solution	Number of respondents	Percentage (%)
Provision of alternative livelihoods, loans and control of chainsaw operation	1	2.7
Provision of jobs and permit to enter GSBA	1	2.7
Provision of jobs	2	5.4
Provision of jobs, permit to enter GSBA, resettling of Kyekyewere community if possible	1	2.7
Provision of more farmland	12	32
Provision of more farmland and loans	1	2.7
Provision of more farmland and permit to enter GSBA	2	5.4
Provision of land for MTS, loans and farm inputs	1	2.7
Provision of land for MTS	2	
Provision of land for MTS and more farmland	1	2.7
Provision of permit to enter GSBA	6	16.2
Provision of permit to enter GSBA and provision of alternative livelihoods	2	5.4
Proper demarcation of GSBA to distinguish it from farmland area	2	5.4
Other responses	3	8.1
Total	37	100.0

5.2 Presentation and Analysis of Focus Group Discussions (FGDs) Data

Discussions with the District officials of the Nkawie Forest District of FSD revealed that the Tano Offin GSBA was established to give special protection to some species of fauna and flora that are facing extinction. Examples include Chimpanzees (found on the hills of the GSBA), White Crested Fowl, Odii tree (*Okoubaka aubrevillei*) and Kokrodua (*Pericopsis elata*). The GSBA system is internationally recognized as the government of Ghana sought grants from donors to establish it. An alternative livelihood scheme was piloted in six fringe communities of the Tano Offin GSBA to help take the resource pressure off of the GSBA. Unfortunately, the scheme has failed due to factors such as insufficient management and monitoring of the effectiveness of the programme, and insufficient funds to beneficiaries.

Fourty nine (49) groups with a maximum of 10 people each (10 from Kyekyewere, Kyirayaaso (11), Bonkrom (11), Adadekrom (10) and 7 from Mpasaaso No. 2) were involved. It should be clarified that the groups were constituted for the purpose of the case study only. The FGDs captured livelihood activities such as carpentry, chainsaw operation, farming, hunting, teaching, driving, small scale mining, masonry,

dressmaking/tailoring, trading, CBAG, hairdressing, herbal medicine/birth attending, barbering, masonry, palm wine tapping and alcoholic drink (Akpeteshies) distilling, and driving. It became evident throughout our data collection for this study that all the livelihood activities are dependent on the forest, either directly and or indirectly.

Some of the ideas received about what the Tano Offin GSBA represents include: a protected area for biodiversity conservation for posterity; a forest reserve for protecting wildlife/animals; a protected area belonging to some white men for the rearing of animals; the GSBA line shows where farmers can farm to; and a forest area where one has to be permitted by CBAG before entry etc. The main knowledge behind the GSBA concept shared by the groups included the protection of biodiversity, environmental quality improvements and protection of watersheds for sustainable development.

It was noted that logging, farming and some commercial harvesting of NTFPs take place in the GSBA, though they are illegal. The groups mentioned that they need more land and degraded portions of the GSBA should be released for MTS. Other responses from the groups were:

- there is no collection of NTFPs depriving them of beneficial goods (e.g. game, fishery resources);
- the GSBA covered part of farmlands; lack of access to wood locally, expensive to purchase wood outside;
- reduced income of inhabitants; and
- something good should come out of the research as several people/groups have been coming around to conduct such similar researches.

Livelihood groups of Kyekyewere also had these additional comments:

- they were told of land area increment in the face of population growth during the forest reservation era but this has not been honoured though the population is increased;
- continuous planting of the limited farming area due to increased population has led to reduced fertility hence loss of income for farmers;
- They should be resettled or given a new directive.

According to CBAGs, they are unable to coordinate their activities because wages from the government is not enough and delays in coming. They want to be made permanent workers who are paid monthly to ensure proper monitoring. Officers of CBAG at the head office are called on to visit the communities to monitor and put some fear into them. In addition, they want FSD to follow up on issues reported to them.

The following, among others emanated as suggestions for curtailing the negative impacts associated with the GSBA designation:

- ✓ Communities should be allowed access into the GSBA. The government should provide communities with license such as the one given to small scale miners.

- ✓ Communities need land for farming; the government must give communities a portion of the land especially at places totally destroyed so that they can grow food and replenish the forest through MTS.
- ✓ Support from the Ghana government such as loans, training in alternative livelihood activities (mushroom production; snail, rabbits, grasscutter, and livestock rearing; soap making e.g. alata soap; dressmaking, etc)
- ✓ Education about the importance of the GSBA to increase understanding and remove fear.

All the groups expressed some negative impacts on their livelihood activity. The dominant negative impacts (including reduction in income, population increases, and lack of farmland, jobs/alternative livelihoods, forest resources, access permits etc) and the solutions mentioned by the livelihood groups are no different from responses from the individual interviews.

The communities are calling for transformations to the GSBA regulations that could present a win-win solution (the international community benefits, GSBA fringe communities benefit). This has to be critically looked into by the government of Ghana and other donor institutions.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

It is indisputable that forest fringe communities are dependent on the forest for their livelihoods. Therefore, to institute a measure that reduces entry into forests poses a great challenge. The fringe communities have expressed their earnest need for the GSBA for farmlands and forest resources, particularly as their populations have increased. Communities' farmlands have declined and have been degraded with over cultivation. They are no longer productive enough to provide their subsistence and commercial needs. While the environmental and ecological benefits rendered by the GSBA are appreciated, they are insufficient to sustain fringe communities' livelihoods. The GSBA concept would be most acceptable to beneficiaries if, in addition to the unquantifiable benefits, some quantifiable benefits are put in place to address livelihood concerns. From the interactions with the communities, they want more farmlands; alternative livelihood schemes, permit to harvest forest resources for commercial purposes, loans etc. This calls for transformation of the GSBA regulations and also to provide other means of livelihoods.

6.2 Policy Recommendations

From the analysis of the data, the following are recommended for policy decisions regarding the livelihoods of GSBA fringe communities:

- ✓ The Government of Ghana should continue to maintain the MTS and make it available to more areas. For admitted communities like Kyekyewere a means of access to the MTS sites should be provided.

This has to be followed by intensive monitoring of the activities of the forest fringe communities to ensure compliance with acceptable rules governing MTS.

- ✓ The communities depend on the forest for both domestic and commercial purposes and as such alternative means of livelihoods should be instituted if the GSBA concept is to continue.
- ✓ There should be re-demarcation of farmlands for forest fringe villages with respect to population size and population growth rate.
- ✓ Communities should be taught conservation agriculture and soil improvement techniques and other good agricultural practices that ensure higher yield with little inputs.
- ✓ Education about the concept of GSBA in communities and its associated consequences should be intensified.
- ✓ Patrolling of GSBAs to guard against illegal activities should be increased as the study recorded cases of illegal activities (logging, NTFPs collection, and farming).

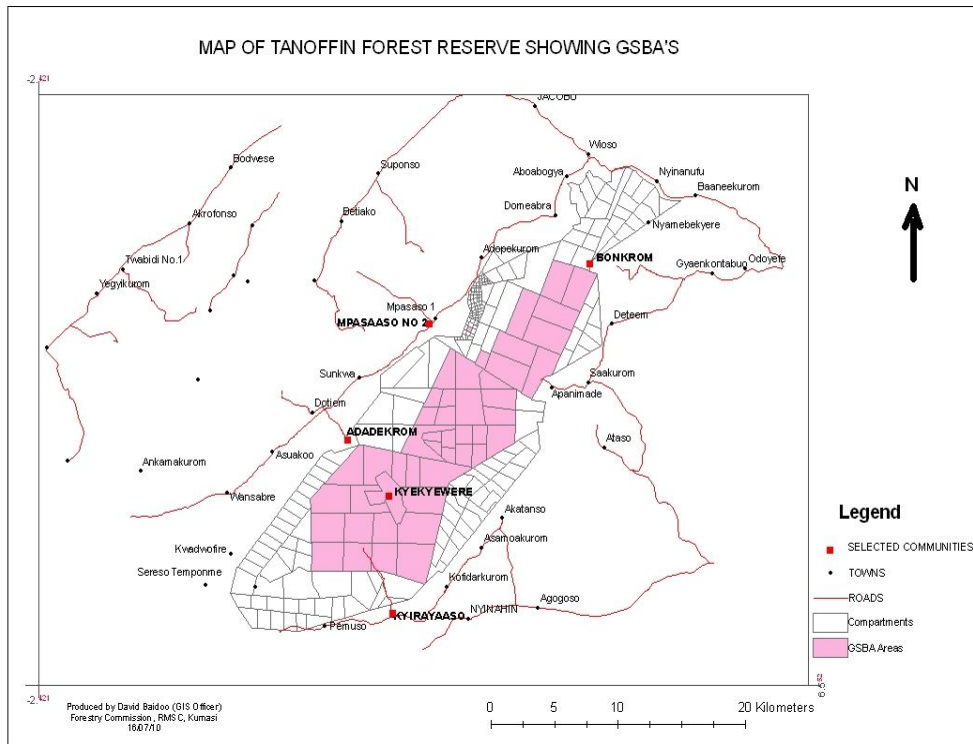
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APPENDICES

Appendix I: Map showing the Tano Offin GSBA and study communities



Estimated populations of study communities

Kyekyewere	1,200
Kyirayaaso	3,000
Bonkrom	500
Adadekrom	1,000
Mpsaaso No. 2	3,600

Appendix II: Checklist for Focus Group Discussions (Community Livelihood Groups)

Name of livelihood group.....
 1. How are you/livelihood activity dependent on the forest?

2. What benefits did you derive from the Tano Offin Forest Reserve (as a whole) before part was converted to a GSBA?

3. What is a GSBA/what do you understand by it?

4. Do you derive some benefit (s) from the non-GSBA portion? Yes/No
 If **Yes** mention some of such benefits.....
 If **No**, what are the reasons?

5. What benefits (forest resources, SRA, etc) do you derive from the GSBA?

6. Are the following activities allowed in the GSBA and on what condition?

Activity	Condition (s)
Logging	
NTFPs collection for domestic use	
NTFPs commercial purposes	

7. Is the GSBA concept a good or bad idea?

8. Has the designation of the Tano Offin GSBA had any impact(s) on:
 a) Individuals' livelihood activity(s) and livelihood? **Yes/No**
 If **Yes**, What are they? (List all). Indicate whether positive (P) or negative (N).
 a.
 b.
 c.

If No, give reasons for observations.....
 b) Community livelihood as a whole (e.g. SRA, development projects started here because of the designation of the GSBA, introduction of alternative livelihood schemes etc)? Yes/No

If **Yes**, What are they (list all)? Indicate whether positive (P) or negative (N).
 a.
 b.

If No, give reasons for observations.....

9. What should be done to improve your access to the GSBA?.....

10. How can the negative impacts you mentioned above be removed?.....

Appendix III: Checklist for FSD officials (DM/RS/forest guards)

1. What is the Tano Offin GSBA concept all about?
2. What are the communal rites of the GSBA?
3. What benefits do the fringe communities obtain from the GSBA as
 - a. Individuals
 - b. A community as a group (E.g. SRA)?
4. Is logging allowed?

5. Is the collection of NTFPs allowed for domestic and commercial purposes? Yes/No. if yes on what condition (s)

Type of use	Conditions
Domestic	
Commercial	

6. What is FSD's position on the GSBA and the livelihoods of the fringe communities? Particularly with access to forest resources?

Appendix IV: Questionnaire for individuals of different livelihood groups from the fringe communities of the Tano Offin GSBA

Preamble (to be read to respondent):

You have been selected to answer this questionnaire because you work and live in a community fringing the Tano Offin GSBA. The questionnaire is being administered as part of a case study research to be presented at a workshop of the **Major Group¹-Led Initiative** in support of the United Nations Forum on Forest on the theme: *Applying Sustainable Forest Management to Poverty Reduction: Strengthening the Multi-Stakeholder Approach* scheduled to take place in Accra, Ghana from 26-30 July, 2010. The main questions the study wants to find answers to are: what are the different livelihood activities of inhabitants of fringe communities of the Tano Offin GSBA; the impacts (both positive and negative) the re-designation of part of the forest reserve as a GSBA has had on your livelihoods; and what could be done to ameliorate any negative unexpected effects on your livelihoods.

We ask that you cooperate and ask questions about anything you do not understand during the interview.

Livelihood group.....

a. Bio-data

Code						
<i>namr</i>	1. Name of respondent					
<i>namc</i>	2. Name of community					
<i>nmpd</i>	3. Name of political district	[1] Atwima Mponua	[2]Ahafo Ano	[99] Others (pls. specify)		
<i>sex</i>	4. Sex	[1] male			[2] female	
<i>edu</i>	5. Educational background	[1] no education	[2] primary	[3] middle/JSS/JHS	[4] SSS/SHS	[5] Tertiary
		[99] Others (please specify)		[999] no response		
<i>age</i>	6. Age	Actual:				
		Category: [1]10-14, [2] 15-24, [3]25-34, [4]35-44, [5]45-54, [6]55-64, [7] 65+				
<i>Orig</i>	7. Origin	[1] native	[2] migrant	5. if migrant, years of settlement:		
<i>nhmtn</i>	6. Name of hometown	8. Region:				
<i>mrts</i>	Marital status	[1]married	[2] single	[3] divorced	[4] widowed	[5] Separated [999] no response
<i>occpn</i>	10. Occupation (s)					

b. Livelihood engagements before GSBA designation

Cod e							
<i>livb</i>	13. What livelihood activity (ies) were you engaged in before the GSBA was	[1] farming	[2] trading	[3] formal employment (specify)	[4] carpentry	[5]masonry	[6] dressmaking/ Tailoring
		[7] driving	[8]collection of NTFPs	[9]small scale mining	[99]Others (please specify)		[999] no response

	created?						
<i>depf</i>	14. What did you depend on the Tano Offin forest reserve for?	[1]Timber/poles for domestic use	[2]Timber/poles for sale	[3]Land for farming	[4]NTFPs for sale (pls. specify types)		
		[5] NTFPs for domestic use (pls. specify types)		[99] others (please specify)		[999] no response	
<i>ainc b</i>	15. Total annual income before the GSBA designation (GH¢)	Livelihood source			Estimated income (GH¢)		
		Timber/poles/NTFPs from off-reserve area			Farming outside reserve area (crops and or animals).....		
		trading/masonry/carpentry/dressmaking/tailoring.....			Timber/poles/NTFPs from reserve area.....		
		Taungya/MTS/HIPC/Commercial plantation/on-farm tree planting.....			Wage employment.....		
		Remittances			Others		

c. Livelihood engagements after GSBA designation

Code							
<i>liva</i>	16. What livelihood activity (s) are you engaged in after the GSBA was created?	[1] farming	[2] trading	[3] formal employment (specify)	[4] carpentry	[5]masonry	
		[6]dressmaking /tailoring	[7]driving	[8]collection of NTFPs	[9]small scale mining	[99] Others (please specify)	[999] no response
	17. What do you obtain from the GSBA? Pls. state all	[1] bush meat	[2]timber	[3]poles	[4]pestles	[5]canes	[6]raffia palm
		[7]water	[8] Firewood	[9]environmental/ecological benefits	[99] Others	[999] no response	
<i>kagsba</i>	18. Please describe the kind of access	[1] entry with permit for domestic use	[2] entry without permit for domestic use	[3] entry with permit for commercial purpose	[4] entry without permit for commercial purpose	[99] others	[999] no response
<i>ainca</i>	19. Total annual income after the GSBA designation (GH¢)	Livelihood source			Estimated income (GH¢)		
		Timber/poles/NTFPs from GSBA.....			Farming outside GSBA (crops and or animals).....		
		Trading/masonry/carpentry/dressmaking/tailoring etc.....			Timber/poles/NTFPs from non-GSBA portion (off/on reserve)		
		Taungya/MTS/HIPC/Commercial plantation/on-farm tree planting			Wage employment.....		
		Remittances			Others.....		
<i>rcliv</i>	20. Reason(s) for change(s) in livelihood activity (ies)						
<i>rctinc</i>	21. Reason(s) for change(s) in total						

	annual income	
d. Dependency on non-GSBA portion		
code		
ngsba	22. Do you have access to the other parts of the forest reserve? (Please tick)	Yes/No
gsbaob	29b. what do you obtain through the access? Please list them	[1]timber/poles for domestic use [2] NTFPs for domestic (specify) [3]timber /poles for sale [4] NTFPs for commercial purpose (specify) [99]others (please state) [999] no response

e. Impacts of GSBA designation on livelihood	
Code	
imp	27. What are the impacts of the GSBA designation on your livelihood? Indicate whether positive (P) or negative (N)?

f. Proposed solutions for ameliorating negative impacts	
code	
nimp	28. List of negative impacts Possible solutions

Thank you very much for your time and knowledge. Ayekoo!

Appendix V: Years of settlement of migrants

Years of settlement	1week-11.5 months	1-10years	11-20years	21-30years	31years+	No response
Frequency/%	7 (6.9%)	38(37.6%)	15(14.9%)	14(13.9%)	17(16.8%)	10 (9.9%)

Appendix VI: Ages of respondents

Name of community	Age category							Total
	25-34	35-44	45-54	55-65	65+	1-24	Missing	
Kyekyewere	18	13	2	1	1	1	0	37
Kyirayaaso	15	17	11	5	3	2	0	53
Bonkrom	12	7	10	4	3	4	0	40
Adadekrom	8	9	7	3	2	3	2	34
Mpasaaso no.2	20	12	4	3	1	7	1	48
Total	73(34.4%)	59(27.8%)	34(16%)	16 (7.5%)	10(4.7%)	17 (8%)	3(1.4%)	212

Appendix VII: Marital status of participants

Name of community	Marital status						Total
	Married	Single	Divorced	Widowed	Separated	Missing	
Kyekyewere	32	2	1	2	0	0	37
Kyirayaaso	36	6	3	3	0	5	53
Bonkrom	30	3	3	3	0	1	40
Adadekrom	26	4	2	1	0	1	34
Mpasaaso no.2	26	12	6	1	1	2	48
Total	150 (70.8%)	27 (12.7%)	15(7%)	10(4.7%)	1(0.5%)	9(4.2%)	212

Appendix VIII: Occupation(s)/livelihood activities after GSBA designation

Livelihood activity	Frequency	Percent
Barbering	4	1.9
barbering, driving	1	.5
barbering, labouring	1	.5
barbering, painting	1	.5
barbering, student	1	.5
bicycle repairing, cocoa harvesting	1	.5
canoe carving	1	.5
Carpentry	2	.9
chainsaw operation	1	.5
chainsaw operation, carpentry	1	.5
chainsaw operation, driving, kente weaving	1	.5
chainsaw operation, sawmilling/logging	1	.5
chainsaw operation, shoemaking	1	.5
chainsaw operation, small scale mining	1	.5
chainsaw operation, trading	1	.5
Cleaning	1	.5
Distilling	1	.5
distilling, cocoa care taking	1	.5
dressmaking	4	1.9
dressmaking, trading	1	.5
Driving	4	1.9
driving, labourer-fuelwood carriage	1	.5
farm labouring	1	.5
Farming	39	18.4
farming, birth attending	1	.5
farming, butchering	1	.5
farming, carpentry	11	5.2
farming, carpentry, cocoa mass spraying	1	.5
farming, carpentry, NTFPs collection	1	.5
farming, chainsaw operation	9	4.2
farming, chainsaw operation, basketry	1	.5
farming, chainsaw operation, driving	1	.5
farming, chainsaw operation, trading	1	.5
farming, distilling	6	2.8
farming, distilling, cocoa farm caretaking	1	.5
farming, dressmaking	5	2.4
farming, driving	5	2.4
farming, farm labouring, chainsaw operation	1	.5
farming, forest guard-CBAG	1	.5
farming, hairdressing	5	2.4
farming, herbalism	1	.5
farming, herbalism	5	2.4
farming, hunting	11	5.2
farming, hunting, CBAG	1	.5
farming, hunting, cocoa spraying	1	.5
farming, linguist-okyeame	1	.5
farming, masonry	5	2.4

farming, mass cocoa spraying	1	.5
farming, NTFP collection	1	.5
farming, trading	1	.5
farming, revenue collection	1	.5
farming, small scale mining	4	1.9
farming, tailoring	4	1.9
farming, trading	19	9.0
farming, trading, dressmaking	1	.5
farming, trading, hairdressing	1	.5
hairdressing	3	1.4
hairdressing, dressmaking	1	.5
hunting	1	.5
masonry	3	1.4
masonry-apprentice	1	.5
masonry, car mate	1	.5
masonry, carpentry	1	.5
mechanic	2	.9
small scale mining	2	.9
teaching	4	1.9
trading	7	3.3
trading, cleaning	1	.5
trading, dressmaking	1	.5
trading, hairdressing	2	.9
trading, hairdressing apprentice	1	.5
Total	212	100.0

Appendix VIII: Livelihood activities before GSBA designation

Livelihood	Frequency
Farming only	31
Farming and hunting	6
Farming and midwifery	1
Farming and chainsaw operation	3
Farming and hairdressing	2
Farming and barbering	1
Farming and herbalism	1
Farming, trading, NTFPs collection, hairdressing	1
Farming and cocoa purchasing clerk	2
Farming and distilling	2
Farming, sawmilling, hunting	1
Farming and agriculture	1
Farming, NTFPs collection, hairdressing	1
Farming and trading	7
Farming and teaching	1
Farming and carpentry	2
Farming and masonry	1
Farming and dressmaking/tailoring	4
Farming and NTFPs collection	1
Trading only	6
Trading and small scale mining	1
Teaching only	1
Carpentry only	1
Masonry only	2
Dressmaking/tailoring only	5
Driving	3

Small scale mining only	1
Hunting only	1
Farm labouring	1
Carpentry and masonry	1
Spraying	1
Hairdressing only	4
Herbalism only	1
Apprentice only	1
Shoe making only	1
Students	2
Barbering	1
Butchering	1
Mechanics	2
Bank security	1
Distilling	1
Family farm help	1

Appendix IX: Access to the non-GSBA portion of the Tano Offin forest reserve

Name of community	Do you have access to the non-GSBA portion of the forest reserve?				Total	Percentage (%)
	Yes	No	No response			
Kyeyewere	22	13	2	37	17.5	
Kyirayaaso	45	8	0	53	25	
Bonkrom	22	13	5	40	18.9	
Adadekrom	18	16	0	34	16.0	
Mpasaaso no.2	24	24	0	48	22.6	
Total	131 (61.8%)	74 (34.9%)	7 (3.3%)	212	100	

Appendix X: Summary of resources obtained from the non-GSBA portion of the Tano Offin forest reserve

Resources/response	Frequency	Percentage
Timber/poles for domestic use	3	1.4
NTFPs for domestic use	27	12.7
Timber/poles for sale	7	3.3
NTFPs for commercial purpose	5	2.4
Timber/poles and NTFPs for domestic use	8	3.8
Timber/poles for domestic use and NTFPs for commercial purpose	4	1.9
Land/land for farming	45	21.2
NTFPs	6	2.8
Timber/poles for domestic use and NTFPs	2	0.9
NTFPs for domestic use and land for farming	1	0.5
Timber/poles and NTFPs for domestic use and NTFPs for commercial purpose	1	0.5
Timber/poles and NTFPs for domestic use and land for farming	1	0.5
Timber/poles for domestic use, Timber/poles for sale and land for farming	1	0.5
Timber	1	0.5
Money	3	1.4
NTFPs for domestic use and Timber/poles for sale	1	0.5
Do not go there	1	0.5
Nothing	95	44.8
Total	212	100

Appendix XI: Summary of the kind of use of GSBA benefits

Kind of use	Frequency	Percentage (%)
Timber/poles for sale	2	3
NTFPs for sale	2	3

NTFPs for domestic use	14	21
Timber/poles for domestic use and NTFPs for domestic use	3	4.5
NTFPs for sale and NTFPs for domestic use	2	3
Ecological/environmental benefits	26	38.8
NTFPs for sale	1	1.5
NTFPs for domestic use and Ecological/environmental benefits	1	1.5
NTFPs for sale and domestic use	2	3
Missing /No response	14	20.9
Total	67	100

Appendix XII: Access to forest land by communities

Community	Total number of respondents	Percent (%) of total with access to forest land
Kyekyewere	37	2.7%
Kyiriyaaso	53	24.5%
Bonkrom	40	25%
Adadekrom	34	26.5%
Mpasaaso No. 2	48	31.3%

Appendix XIII: Detailed Summary of positive impacts from the Tano Offin GSBA by respondents

Benefits	Number of Respondents	
Good Air and water	1	
Shelterbelt, rainfall, biodiversity protection and NTFPs	2	
Biodiversity protection and rainfall	1	
Biodiversity and watershed protection and fresh air	1	
Shelterbelt and biodiversity conservation	1	
Rainfall	6	
Watershed, rainfall, biodiversity	1	
Shelterbelt, good air, rainfall	1	
Shelterbelt/windbreak and for future generations	2	
Shelterbelt/windbreak, rainfall	3	
Shelterbelt, future generations and air	2	
NTFPs, environmental protection	1	
Shelterbelt, good air	1	
Biodiversity, windbreak, watershed protection	1	
Biodiversity, good air, watershed protection, rainfall	1	
Good air	1	
Farmland, building materials, water	1	
Wood	1	
Watershed protection	2	
Income	6	
Good air and water/rainfall	3	
NTFPs	7	
Shelterbelt, protection of rivers/watershed and as heritage for future generation	2	
Building materials	1	
Rainfall and food stuffs	1	
Biodiversity and watershed protection	1	
Drinking water	3	
Watershed protection, biodiversity protection and farmland	1	
Ecological/biodiversity conservation	10	
Watershed protection and rainfall	3	

Building materials and NTFPs	1	
Good air, water and food	1	
Shelterbelt/windbreak and good air	2	
Windbreak/shelterbelt	7	
Biodiversity, rainfall and NTFPs	2	
Rainfall and future heritage	2	
GSBA for future heritage	13	
Biodiversity protection and watershed	1	
Protection of rivers and for future generation	1	
Income, NTFPs and watershed protection	1	
Income, food and health	1	
NTFPs and for future heritage	2	
Windbreak, fresh air and employment	1	
Biodiversity conservation and land for farming through MTS	1	

Appendix XIII: The detailed summary of negative impacts of the Tano Offin GSBA on the livelihoods of respondents

Impact	Number of respondents
Hardship	1
Dead/unfertile land, we cannot do anything for, posterity, no access into the forest	1
Lack of access to farmland	3
Limited/small land	4
Quarrels from reporting intruders	1
Farm may be destroyed	1
Congestion due to too little land	1
Increase population and land is not enough.	2
Lack of access/no permit to enter	4
No permit to log trees	1
Small farmland, no entry into certain parts for farming	1
Small land and unfertile	2
Small land, no entry	1
No access, unfertile land, population increased	1
Increased population, small land, no entry	1
Wind impact strongly felt as chainsaw operators fell trees	1
No land therefore no jobs for the youth, no wood, the land we are living on is part of the forest	1
No entry, no wood for work	1
Illegal chainsaw operations, people cause bushfires	1
Animals disturbed when GSBA is entered into	1
Reduced modified taungya system farming	1
Limited/lack of access to forest resources	4
No job apart from chainsaw operations/job affected	2
Limited benefits/Reduced income from work	2
Hunger due to lack of farmland/ Lack of farmland as most lands have been converted into cocoa farms	2
Unfertile farmland	1

Appendix XV: Negative impacts of Tano Offin GSBA on livelihoods and possible solutions expressed by respondents. The communities are calling on the Government of Ghana, donors etc to address the solutions.

Negative Impacts	Possible Solution (s)
The lands are dead and cannot be farmed any more; we cannot do anything for posterity; we cannot enter the forest	Provision of more land; we should be given permit to enter
The land is small	Provision of more land
The land is small	Provision of more land
Farms may be destroyed	Provision of jobs

The population has increased and there is not enough land	Provision of more land
No permit to enter	Permits to enter GSBA and forest reserves
Small farm lands; inaccessibility to enter certain parts for farm activities	Proper demarcation of the GSBA to help know farm lands
Declining soil fertility; small farm lands	Give us land under MTS
Lack of access to land for farming	MTS; release land for farming
Small farm lands; reluctance to entering	Proper demarcation to show government land and community land; increase community land
No access into the GSBA for farming; degraded farm land; population increase; some plantains take at least 2 years before maturity	
Our numbers have increased and the land is small; people are no longer allowed to enter	More land; if our entering would not cause problems we should be allowed to enter
Wind impact strongly felt as chainsaw operators fell trees	Control of chainsaw activities; introduction of alternative livelihoods and provision of loans
Limited farmland	Release of more land
Congestion as there is too little land	Release of more land for farming
Reduced farming area due to increased population	Release of more land; provision of loans
Lack of access	The permit before entering should be re-introduced
Small farm land; decline in soil fertilizer	Portion of the forest should be given for farming
Cannot get land to farm so no jobs for the youth; cannot get wood for building; the land we live on is itself a part of the forest	Provision of jobs; permits should be provided for such cases; resettling at a different place if possible
I do not get any wood for work if I don't enter it	Provision of permits to enter GSBA and forest reserves
Illegal chain sawing and those who cause bush fires	
No chance to harvest trees we need	Permit or jobs to assist as the farming work is not enough to support living
The animals are disturbed when you go there	I have stopped going into the GSBA
Lack of farm land	The community has to take a letter to the FSD to demarcate another forest reserve for us
Reduction of taungya farming	portion of GSBA should be given as MTS
Hardship in getting certain species	Provision of permit for access
Lack of access	
Hardship	Provision of money or loans and inputs; and MTS for farmers
Quarrels from reporting intruders	The police should be called to intervene when intruders are reported
Curtailing of some benefits like yam and atooto	
We don't get land to farm anymore	Demarcation of part of the forest for farming
Hardship in getting wood, cane	
There is no other work here apart from chain sawing	Provision of jobs
My job has been affected	Institution of alternative livelihoods; permit to enter the GBSA;
It has reduced my income	Provision of alternate jobs; permits to enter GSBA
Reduction in farm size	Provision of part of GSBA for farming
Hunger due to lack of farm land	Release part of the GSBA for us to farm on
Lack of farmland (most lands have been converted to cocoa farms)	The community has to send a petition to the government to release some GSBA land for us to farm on
It has decreased what I can get from work	They should allow us entry into the forest if it is possible
We used to get more meat before the GSBA was created because of chain sawing	Chain saw operation must be ended
No permit for logging trees	Permit to log trees
The land is not productive enough anymore	The GSBA line should be moved back so that we can be given land to farm