

THE NATURE AND ROLE OF LOCAL BENEFITS IN GEF PROGRAMME AREAS

CASE STUDY

*Ghana: Natural Resources
Management Project*



GEF

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EXECUTIVE SUMMARY

The GEF is conducting a portfolio wide case study to better understand the relationship between local benefits and the attainment of global environmental benefits. The objective of this study is to assist in maximizing the level of local benefits included in future GEF policy, strategies, programs, projects design and implementation within the context of GEF's mandated focus on Global environmental benefits.

The Ghana Natural Resources Management Project (NRMP) has been selected as one of the twenty case studies being undertaken globally by the GEF. This is because of explicit linkages the project design makes between improvements in the local benefits in livelihoods and the attainment and sustainability of global environmental benefits.

The tasks of the consultants was to conduct a field-based case study of the project in two localities in which community based resource management structures and systems have been established and pilot tested to assess and describe the types and scale of local benefits and negative impacts, intended or unintended, which have resulted from GEF projects, including local perceptions of the benefits and impacts; examine and describe the nature of the links between local benefits and attainment of the global environmental benefits; and evaluate and describe the extent to which the strategy and environmental management options in the project design and implementation properly incorporated the opportunities to generate greater levels of the local benefits, essentially looking at what the project did not do as well as what they did. The study was conducted in Sagyimase and Jema communities on the fringes of the Atewa Range and Boin Tano Forest Reserves respectively between and...2003..

In the conduct of the study, participatory techniques including open forum and focus group interviews were used. The Consultants, recognizing the heavy emphasis placed on local involvement and in particular the role of Community Biodiversity Advisory Groups (CBAGs) in the project implementation, ensured that a good representation of their membership participated in the forums.. Similarly at the local level, apart from the CBAGs, major segments of the community (elders, women, men, youth and migrants) were also interviewed.

The main findings of the study include the following:

- The selected protected areas comprise fringe communities which have predominantly farming populations with history of dependence on forest resources such as fertile land for farming and non-timber forest products, including bush meat, for their sustenance. Illegal chainsaw operations were a major source of income in the communities which have little or no alternative sustainable livelihoods. The poor social and economic infrastructure as well as financial and human resource base limit the options and opportunities for development in

alternative sustainable livelihoods. Therefore, the setting up of the GSBAs has limited the benefits they derive from the forest reserves but this has improved the preservation, conservation and management of the reserves.

- In terms of livelihood effects, the field survey results suggest that CBAGs are causing some households to have significant problems in meeting their needs for forest products, especially local people and migrants who are involved in chainsaw operations. Migrants and poorer households are particularly affected by restrictions on forest product collection because whereas many indigenous people have private forests to provide for their needs, poorer households and migrants have fewer alternative sources to meet their needs.
- The survey disclosed that local communities obtained some income from the collection and sale of forest product. The importance of forest income usually lies more in its timing than magnitude. It seldom accounts for a large share of household's total income, but it is often important in filling seasonal or other cash flow gaps.

Other project negative impacts on the local people revealed by the study include:

- Limited access to NTFPs and the hardships it has engendered because local people cannot enter the forest to collect resources that they used to supplement their living. People are now substituting bush meat for fish and poultry products
- The GSBAs has created shortage of land for farming, especially land for cocoa production, the main stay of the local economies.
- Loss of job opportunities such as hunting, chainsaw operations and farming in the forest reserves which provided the only viable alternative livelihoods
- Relocation to other communities by the youth who depended on the forest reserves for the livelihoods
- Thefts of farm produce has increased due to loss of opportunity to farm in the forest reserves

The survey results showed that the project has made some gains in human development:

- Environmental education by the CBAGs has reduced illegal activities in the forest reserves which was a major source of litigation and social tension in the communities
- Concessionaires have been awakened to their social responsibilities and obligations to the local communities
- Community members have become aware of their rights and responsibilities in the management of the forest reserves

A key observation of the study is that conditions of the forests have improved since the FSD set up the GBSA and adopted collaborative forest management approach particularly the setting up of the CBAGs to serve as community contact and advisory groups to get local participation in the management and development of the forests. The areas in the forest reserves planted and improved are in marked contrast to the general deterioration of other nearby forests outside the reserves. The improvement is the consequence of the sustainable management regimes and enforcement of forest protection and resource conservation rules and regulations in the forest communities. Local people admit that the project environmental impacts have been in the following areas:

- Afforestation and rainfall patterns have improved.
- Illegal tree felling and group hunting have reduced.
- The seasonal reduction of volumes of water bodies have subsided
- The use of poisonous chemical in fishing has ceased. This has prevented diseases such as cholera and dysentery.

The field studies revealed that, what at the local level is positive benefit may adversely affect the attainment of global environment benefit and vice versa. The key areas identified include:

- The ban on the illegal chainsaw operations which used to be the major sources of cash income for the people is seen as negative impact of the project because it has resulted in acute unemployment. However, local people admitted that the forest reserves have recovered some of their original form and structure and this has contributed to local climate improvement (good rainfall, reduced intensity of sunshine, etc) which have positive implications for the global environment.
- The control of farming activities in the forest reserves has led to the scarcity of fertile land for farming in the communities and the overexploitation of community farm lands. But the restriction on forest reserve lands for farming has lead to the conservation of the forest reserves with resultant positive effect on vegetation and climate improvement.
- The educational and awareness creation campaigns undertaken by the project in the communities has contributed to the empowerment of the local institutions in the decision making on the enactment bye-laws for protection and management of natural resources at the district level.
- The restriction placed on hunting has compelled local people to substitute game with fish and poultry. Also certain forest foods such as cocoyam are no longer readily available for their use and have therefore resorted to less favoured food crops such as cassava. But the local pointed out that the changes in consumption pattern have led to the preservation of game and wildlife.
- Due to the closely knit nature of the local communities which makes it easy for each member to know what their neighbours are doing, people's behaviour and attitude towards rules and regulation on natural resources

conservation and management has improved dramatically by the educational and awareness creation of the effects of wanton destruction of the forest on the lives of local people. This resilience is further enhanced by the fear of arrest and the resultant sanction.

The study showed that the two approaches adopted by the project to get local involvement, the formation of the Community Biodiversity Advisory Groups (CBAGs) and the setting up of the Community Investment Fund (CIF) to provide financial support for alternative ecologically sustainable livelihoods to communities whose livelihoods depend on the forest reserves, were appropriate but have had implementation shortfalls. The major revelations include:

- The formation of the CBAGs at the beginning of the project was strategic because it galvanised the support of the local people for the project although they faced some opposition from those whose livelihoods depended on the forest reserves, especially illegal chainsaw operators.
- The voluntary nature of the CGBAs, which was initially emphasised by the project as the underlying principle for membership, has been very beneficial to the survival of the CBAGs because members understand that their activities is non-remunerative in terms of wages and salaries.
- Female membership of the CBAGs was found to be low no conscious effort was made to substantially increase women membership.
- The formation of the CBAGs has enhanced local participation in decision making at the local level especially on enactment of bye-laws for protection and management of forest reserves.
- The CBAGs are active and performing well but their morale and performance could be improved by meeting some of their concerns including the provision of logistics such as uniforms, raincoat, insurance cover, means of transport, credit to expand farm activities and to trade, means of transport for patrolling, communication gadgets (walkie-talkies), food for work and payment of regular financial allowances (either monthly or quarterly), and training in sustainable livelihoods

On the CIF the study revealed the following:

- The priority alternative sustainable livelihoods that CIF may be used for include: poultry and livestock production (pigs, sheep, goats and chicken); grasscutter rearing; beekeeping; mushroom production; fish farming; and processing and adding value to NTFPs.
- No training has been given to the communities on these livelihoods in preparation for the disbursement and use of the fund. But the survey revealed that some individuals have learnt sustainable livelihoods on their own and wish to use this expertise when they receive the fund.

- Women may use the money to do trading, soap making, dressmaking and other traditional livelihoods. Similarly, men showed interest in the use of the fund for the expansion of their farms and other commercial businesses including trading.
- Preference of the local people for the disbursement of the fund is to make it a revolving one, with priority first given to groups and second to individuals. Women groups or individuals should be given equal chance as men.
- No strong indications of diversion of the fund was established by the study. But it revealed the possibility of the use of the fund for ecologically non-friendly economic ventures. This is because local people are aware of instances that some local people who benefited from credit facilities which were tied to specific project related activities had difficulties in paying back because such economic ventures did not give quick and adequate returns.
- The study established a strong felling of disappointment amongst the local people about the delay in the disbursement of the fund. It came out clearly in all discussions and interviews that further delay of the fund may threaten the survival of the CBAGs and adversely affect the conservation of the GSBAs. The study revealed that the delay could have been avoided.

Based on the identified key issues, the following recommendations have been proposed:

1. Strengthening of educational campaigns on the GSBAs

Local people are aware of the benefits that they stand to gain from the project and its cost to them. However, the linkage of the project to the sustainability of their livelihood systems and global environmental benefits are not well appreciated. Therefore, the project should organise more educational campaigns at the community level to deepen the understanding of the local people on the importance of the project, especially its global significance. Also, the linkages or networks of illegal activities in the forest reserves such as the illegal chainsaw operations have a national dimension, therefore, the educational campaigns should not be limited to the local level but must be also be given a national focus. This may be facilitated through the national television, radio and the print media, seminars and workshops.

2. Expedite action on the setting and disbursement of the CIF

The field study showed clearly that the patience of the local communities is running out for the delay in the implementation of the CIF which was promised at the beginning of the project. To sustain community enthusiasm and their trust as well commitment to any future involvement in similar projects, the disbursement of the fund should be implemented within the shortest possible time.

3. Organise training programme on relevant sustainable livelihoods for CBAGs and community members

The CBAGs and the entire communities claim that they have not received any training in sustainable livelihoods although some people including members of CBAGs have knowledge on some sustainable livelihoods activities. To forestall the diversion of the funds they will receive under the CIF, the project should organise training workshops for the CBAGs and other members of the communities. Alternative sustainable livelihoods that training was requested are:

- Poultry and livestock production (pigs, sheep, goats and chicken
- Grasscutter rearing
- Beekeeping
- Mushroom production
- Fish farming
- Processing and adding value to NTFPs

4. Provide logistics and incentives to the CBAGs to enhance their performance

The CBAGs clearly have logistics constraints and the few working tools that have been supplied to them by the project (Wellington boots, T-Shirts, cutlasses, etc) were not adequate to go round all the members as was emphasized during the interviews, that this has caused some members to leave the group. To facilitate the activities of the CBAGs the project must meet their basic and essential operational tools and equipment needs, especially those they require for their patrol duties in the forest reserves. The logistic the CBAGs requested include:

- Uniforms
- Raincoats
- Means of transport for patrolling
- Communication gadgets (walkie-talkies)

The CBAGs should also be given incentives to sustain their enthusiasm. Possible areas for motivating include:

- Insurance cover due to the risky nature of their work
- Credit to expand their farming activities and trade
- Food for work i.e. supply of essential food items (rice, sardines, edible oil, etc) during the lean season
- Payment of financial travelling allowance commensurate with the actual distance they travel to attend meetings and some extra money for meals.

5. Provide other incentives to the entire community members for them to support the project

The local people are aware that loss of access to fertile land in the forest reserves will be a major cost to them as a result of the project and this will aggravate the already land

scarcity problem, especially for migrants and women. Discussion with them also revealed how their nostalgia about when they participated in taungya because of the staple food crops they could grow in the forest which do not do well on land outside the forest reserves. As incentive to the local people and also to illicit their support for the protection and management of the forest reserves, the project should consider the reintroduction of taungya in the communities.

6. Facilitate active participation of women in the CBAGs

It was clear from meetings held with the CBAGs that female representation in the groups was low. Since women play a major role in the awareness creation due to their interaction with children, friends and other community members, conscious effort should be made by the project to attract women into the CBAGs.

7. Facilitate the improvement in the opportunities for other livelihood systems

It became apparent during interviews and discussions with the youth that several of them were interested in artisanal trades which they believed would offer them better opportunities than farming and also eliminate their dependence on the forest reserves. The project should therefore explore the possibility of getting the youth in forest fringe communities access to training in some of professional trades since it the youth who are mainly engaged in the illegal chainsaw operations. Some of the trades suggested include carpentry, masonry, dressmaking and tailoring, soap making and bakery.

8. Facilitate the improvement in the general socio-economic environment of the forest fringe communities.

The study revealed the poor socio-economic environment in the study communities. The poor social and economic infrastructure as well as financial and human resource base usually prevalent in forest fringe communities limits livelihood opportunities of the people which translate into their dependence on the forest reserves. The project should explore the possibility of working with the district assemblies to improve the basic social and economic infrastructure in these communities.

To sum up it must be emphasized that what came out strongly of the study was that local people are aware that the GSBAs will give them benefits in the long run but in the short term they there are several costs that they will have to sustain, especially the loss of access to some resources in the forest reserves, particularly land for farming and community expansion and development. Consequently, they expect to be compensated. Thus the conception of the CIF, particularly its use to support sustainable alternative livelihoods in the fringe communities, is appropriate.

Unfortunately, one of the things that the project did not do well was the long delay in implementing the disbursement of the fund. This has raised speculation and doubt

amongst the local people, including CBAGs members about the project fulfilling this promise. Indications were that a further delay of the fund may derail the project. In future such interventions should be planned to overlap or run in tandem with other project activities to ensure effective local participation.

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LIST OF ACRONYMS

CBAGs	Community Biodiversity Advisory Groups
CFC	Community Forest Committee
CRM	Collaborative Resource Management
CRMU	Collaborative Resource Management Unit
MLF	Ministry of Lands and Forestry
FC	Forestry Commission
FR	Forest Reserve
FSD	Forest Services Division
FSDP	Forest Sector Development Project
HFZ	High forest zone
MOFA	Ministry of Food and Agriculture
MES	Ministry of Environment and Science
CIG	Conservation International Ghana
NC	National Coordinator
NGOs	Non-Governmental Organisations
NRMP	Natural Resources Management Programme
NTFP	Non- Timber Forest Product
RM	Regional Manager
WD	Wildlife Division

Local currency unit: Cedis (¢); Exchange Rate: One US\$ is equivalent to ¢8700

1.0 INTRODUCTION

1.1 Background of the case study

The GEF is conducting a portfolio wide case study to better understand the relationship between local benefits and the attainment of global environmental benefits. The objective of this study is to assist in maximizing the level of local benefits included in future GEF policy, strategies, programs, projects design and implementation within the context of GEF's mandated focus on global environmental benefits.

The Ghana Natural Resources Management Project (NRMP) has been selected as one of the twenty case studies being undertaken globally. This is because of explicit linkages the project design makes between improvements in the local benefits in livelihoods and the attainment and sustainability of global environmental benefits.

With the view to achieving the above, the World Bank contracted a team of Consultants to undertake the case study on The Ghana Natural Resources Management Project (NRMP). A contract to this effect was signed formally between the Consultants and the World Bank on the on the 29th of October, 2003 and since then the Consultants have undertaken the following:

- Meetings with the Case Study Coordinator
- Scoping exercise with the World Bank Team
- Prepared an Inception Report
- Carried out field activities involving data collection from respective key stakeholders
- Preparation of draft final report (the focus of this report)

1.1.1 Project history

Overview of the project- Historical Perspective

The Globally Significant Biodiversity Areas (GSBAs) project in Ghana is one of the five components of the Natural Resources Management Programme (NRMP) of the Ministry of Lands and Forestry (MLF). The NRMP is a comprehensive ten-year sector investment programme. The purpose of the programme is to secure sufficient resources to implement the Forestry Development Master Plan (MLF 2001).

The ten year programme was originally designed by the Government of Ghana in Collaboration with the World Bank and is being implemented in three phases: a first phase of two years, followed by two four-year phases. The full programme will address issues of conservation, enhancement and sustainable utilization of Ghana's land, forest, savanna woodland and wildlife resources.

The first phase of the programme, NRMP 1, was designed to comprise five components: high forest management, savanna resources management, wildlife resources management, biodiversity conservation and environmental management coordination. Based on recommendation of the Implementation Assistance Mission in September 2000, additional components – Policy and Institutional Reforms (PIR) and Programme Coordination and Financial Management (PCFM) have been added. Each component is supported by one or more technical assistance project with core assistance being provided by the International Development Association (IDA) of the World Bank and Global Environmental Facility (GEF).

The overall development objective of the NRMP is to protect, rehabilitate and sustainably manage national land, forest, savanna woodlands and wildlife resources and to sustainably increase the income of rural communities who own these resources. Specifically, the development objective of the Phase 1 is to establish effective policy and institutional frameworks for sustainable resources management programmes.

The NRMP 1 was launched in June 1999 and was originally earmarked to be completed by September 30, 2002. However, the completion date was later extended by the IDA to June to June 30, 2003. Conditional on the successful implementation of this project, the second phase of the (NRMP II) would support the initial implementation of the collaborative resource management programmes, focussing on selected sites considered priorities from environmental, economic or social point of view.

Based on the successful completion of the NRMP 1 and the subsequent review of the phase by the supporting agencies, several activities have taken place under the NRMP II among which is the implementation of the GSBAs. This activity is a key component of the High Forest Biodiversity Conservation Project, the focus of this case study.

Objectives of the High forest Biodiversity Conservation Project

The global programme objective of the High forest Biodiversity Conservation Project is to establish effective systems for the protection of globally significant biodiversity areas in order to increase their ecological security within the tropical high forest biomes of Ghana.

The objectives are to:

- Identify, document and demarcate forest reserve areas of high importance for global biodiversity conservation
- Protect a significant portion of forest biodiversity through implementing an ecosystem approach to management within the high forest zone
- Improve knowledge of the biodiversity distribution and status
- Enhance biodiversity protection within multiple-use production forests
- Ensure sustainable and preserve genetic diversity within the flora and fauna in GSBAs and forest reserves

Among the key outputs arising from the execution of the above objectives include the identification of 29 forest reserves and their exclusion from timber harvesting on the merit of their high significance as biodiversity-rich areas. These form the core of the Globally Significant Biodiversity Areas (GSBAs) in Ghana High Forest Zone. Five of these forest reserves are wholly protected while 18 are partially covered. The remaining six (6) are Southern Dry Forests (SDFs).

Socio-economic surveys have been completed for all the 29 designated GSBAs and Community Biodiversity Advisory Groups (CBAGs) have been formed in several of the fringe communities to ensure effective local participation in the protection and management of the GSBAs.

1.1 Objectives and Scope of the Assignment

The purpose of the case study is to understand the relationship/linkages between local benefits (and/or negative impacts) and the attainment of global environmental benefits of the GEF-supported Ghana Natural Resources Management Project (NRMP).

The overall objective of this case study is to assist in maximizing the level of local benefits included in future GEF policy, strategies, programmes, project design and implementation within GEF's mandated programmes. The study will also consider how the GEF financed project components relate to the overall programme, in terms of lessons-learning and sharing, and the development of common approaches, particularly concerning community participation and the generation of benefits

The specific objective is to conduct a field-based case study of the project in those communities in which community based resource management structures and systems have been established and pilot tested to assess the progress made by the project so far including the development and implementation of the Community Investment Fund, intended to provide community members with credit facilities to engage in alternative sustainable livelihoods.

The scope of services of the consultants towards the achievement of the above objectives includes:

- i. Assessment and description of the types and scale of local benefits and negative impacts, intended or unintended, which have resulted from GEF projects, including local perceptions of the benefits and impacts.
- ii. Examination and description of the nature of the links between local benefits and attainment of the global environmental benefits
- iii. Evaluation and description of the extent to which the strategy and environmental management options in the project design and implementation properly incorporated the opportunities to generate greater levels of the local benefits: essentially looking at what the project did not do as well as what they did.

1.2 Expected Outputs

The consultant is expected to undertake a case study in two selected GSBAAs and prepare a report specifying the following:

- Key characteristics of the selected protected areas
- Communities profiles including socio-economic conditions
- Gender disaggregated data
- Types and scale of local benefits and their impacts
- Perceptions of local people on benefits and impacts
- Description of the nature of links between local benefits and the attainment of global environmental benefits
- The extent to which the strategy and the environmental management options in the project design and implementation properly incorporate the opportunity to generate greater levels of local benefits; specifically an assessment of the gaps in the project and improvement that can be added on to the project.

1.3 Structure of the Report

This document constitutes the draft final report and provides details on activities executed under the assignment. The Structure is briefly presented as follows:

The first section of the report deals with the introductory aspects, which include the background, objectives, expected outputs and structure of the report. Section 2 focuses on the methodology and approach adopted for the study. It highlights the scope, general approach and details of the methodology. The key outcomes of field activities carried out under this assignment are the main focus of the third section. In this section, the results of the stakeholder consultations including an assessment of livelihood issues, types and scale of local benefits and their impacts and the appropriateness of the project strategy (the gaps in the project and improvement that can be added on to the project) are presented. Section four presents the key findings and recommendations whilst the fifth section concludes the report.

2.0 METHODOLOGY AND APPROACH

2.1 Scope

The overall activity of the assignment as contained in the TOR was to conduct fieldwork-base case study to understand the relationship/linkage between local benefits (and/or negative impacts) and the attainment of global environment benefits of the GEF supported project: Natural resources Management. This field work was to cover at least two selected communities on the fringes of two GSBAs.

2.2 General Approach

In order to ensure that at the community level views of the various groups, especially the poor, women and the vulnerable were captured, focus group meetings were organised. The Consultants placed heavy emphasis on stakeholder involvement and consultation in the execution of the assignment. Therefore, views of the District Forest Managers and their team were also sought to clarify issues that were raised at the community level.

Throughout the execution of the assignment, the Consultant kept close touch with the Biodiversity Conservation Project Coordinator and the executives of the CBAGs of the selected study communities to ensure timely arrangement of meetings and full participation of the various stakeholders.

2.3 Description of methodology

2.3.1 Pre-field Activities

The pre-field activities included the following:

- Meetings with the Case Study Coordinator
- Pre-field Consultations
- Scoping exercise
- Desk studies

The details are provided below.

Meetings with the Project Coordinator

An initiation meeting was organised on the 9th of October, 2003, during which the GEF/World Bank Team debriefed the Local Consultant, the team leader, on the case study in Ghana. Key issues discussed included:

- Pre-field Consultations with sector ministry, relevant government ministries, department and agencies (MDAs) in Accra
- Planning and execution of a scoping exercise in communities in which community based resource management structures and systems have been established and pilot tested
- Gender component of the study and the agreement on the schedule of a gender expert

- Preparation of a work plan
- Printed secondary material

A second meeting was held with the GEF/World Bank Team on the 15th of October, 2003 to discuss and agree on the Draft Work Plan.

Pre-field Consultations

This consisted mainly of courtesy visits and consultations and discussions with sector ministry officials and technocrats. Other relevant government ministries, departments and agencies (MDAs) were visited and discussions held with key officials. Visits were also paid to international development agencies, missions and NGOs including the Country Office of the World Bank Mission and DFID. The purpose of these meetings was to achieve first hand understanding of the institutional and policy environment of the project.

Scoping exercise

The scoping exercise comprised visits to selected project communities, regional and district forestry offices and a private timber firm. It lasted between 12th and 15th October 2003, the final day of which was used to debrief officials of the sector on the preliminary findings of the team.

Four settlements in which community based resource management structures and systems have been established and pilot tested were chosen for the visits. These were Apedwa and Sagyemase on the fringe of the Atewa Range in the Eastern region of Ghana; Jema on the fringe of Boin Tano Forest Reserve in the Western region of the country; and Seremowu on the fringe of Cape Three Points Protected Area, also in the Western region of Ghana. In each region discussions were held with regional and or the district forestry officials, including the District Forest Managers, who have direct day-to-day responsibility for implementation of the project activities in the selected forest reserves. In the project communities meetings were held the CBAGs. Sites of some of the GSBAs were also visited by the team.

A private timber firm, Samatex, which operates the largest sawn mill in the country and based in the middle of the forest town of Samreboi in the Western region, was visited. Discussion were held with the management of the firm which owns one of the largest sawmills in the country and has concessions in a number of forest reserves including Boin Tano, part of which has been demarcated as GSBA.

The findings of the scoping exercise were presented by the team as part of the preliminary finding to officials of the sector ministry at a wrap meeting held in Accra on the 16th of October, 2003. The issues discussed at the meeting provided the vital areas for in-depth investigation for the case study by the Local Consultant

Desk studies

The local consultant reviewed relevant project reports and other related material that were provided by the GEF/World Bank Team. Other materials obtained from the sector ministry and elsewhere on the project were also reviewed.

2.3.2 Main Field Work

The main field work was focused on two forest reserves namely Atewa Range in the Eastern region and Boin Tano Forest Reserve in Western region; Sagyimase community was studied in the former while Jema was studied in the latter. The communities were picked after reconnaissance visits to a number of communities fringing these FRs by the local consultants and the World Bank/GEF team during the scoping exercise. Amongst the key factors that underlie the differences in the protection of the reserves is their relative remoteness or closeness to major truck roads. This is directly related to the level of illegal activities in the reserves. Based on these and other observations made by the team during the scoping exercise, one community which is comparatively remote (Jema) and the other (Sagyamase) which is close to a major trunk road (Kumasi-Accra Highway) were selected for the in-depth field studies by the local consultants.

A combination of participatory approaches including observations, focus groups and key informants interviews and discussions using checklists (see section Annex 1) were the main methods used for data collection at the community level.



A female focus group discussion at Sagyimasi

Selected household case studies were also done; the objective of this was to probe key issues and to quantify some of the data that were collected at the focus group and key informant interviews. The major respondents at the community level included the following:

- CBAG members
- Local chief and their elders
- Youth
- Women and men
- Migrants and tenants
- Selected households

Community level organisations and institutions were also interviewed. Private timber firms including Samatex and other local owners of ‘mobile sawmills’ were also interviewed. Three days were spent for interviews in each community including visits to some livelihoods projects sites initiated by CBAGs.

At the district level, discussions were held with the district forest managers and staff to elicit information on the forest reserves and the local communities visited. These meetings provided useful forum to crosscheck some of the information gathered to at the community level.. A total of 5 days were spent in each study area. The entire fieldwork lasted between the 12th and 21 of November, 2003.

2.3.3 Workshop

This activity which will be undertaken as a validation exercise is scheduled at the tail end of the assignment. The local Consultants will present their field results at a stakeholders’ workshop at a site near one of the case study forest reserves. Stakeholders to be invited will include project staff from the MLF, District Assemblies, local farmers and representatives from the CBAGs. Comments and suggestions from the workshop will be incorporated in the final report.

3.0 OUTCOME OF FIELD ACTIVITIES

In this case study the focus is on gaining a better understanding of the relationship between local benefits and the attainment of global environmental benefits. Therefore, in the communities studied, an in-depth assessment of the types and scale of benefits as well as the negative impacts, intended and unintended, which have resulted from the creation of the GSBAs was undertaken. The major outcomes of the study have been summarized under the following main headings:

- Key characteristics of the selected protected areas
- Types and scale of local benefits and their impacts (including gender disaggregated data)
- Perceptions of local people on benefits and impacts
- Description of the nature of links between local benefits and the attainment of global environmental benefits
- The appropriateness of project strategy

3.1 Key characteristics of the selected protected areas

The main characteristics of the study communities are presented briefly as below whilst the community profiles are detailed as Annex 1:

- i. *natural environment*
- ii. *physical characteristics(economic and social infrastructure)*
- iii. *local economy(financial)*
- iv. *social characteristics*
- v. *population*

Natural and physical environment

The study communities, Sagyemase and Jema are located on the fringes of the Atewa Range and Boin Tano Forest Reserve respectively, both in the high forest zone of Ghana. The Sagyemase community is very close to the Atewa Range. A building is almost at the foot of the range. Jema, on the other hand, is far removed from the forest reserve, about 7 kilometres away.

The local vegetation of the communities comprise mixed patches of secondary forests, crop lands (both tree and food crops) and fallow areas. In both communities, off- reserves forests have reduced significantly due mainly to logging and increased demand of such lands for the cultivation of cocoa and other tree crops including citrus and oil palm. The availability of such lands is scarcer in Sagyimase where community lands are comparatively smaller with greater part under tree crops estates.

In both communities, soils are classified by the local people as of moderate to poor fertility due to reduced fallow periods. This has affected the crop types as well as

cropping patterns. There is increasing shift from the cultivation of preferred cash crops, especially cocoa, to the cultivation of annual crops such as maize and cassava. This has changed the livelihoods patterns of most local people (see discussion on local economy below). Due to recent increases in cocoa prices, farmers in both communities have started new farms or are rehabilitating old cocoa farms. Most respondents indicated that soils in the forest reserves are comparatively fertile and more suitable for the cultivation of most preferred cash and food crops, such as cocoa, citrus, oil palm and plantain and cocoyam.

Several streams which take their sources from the forest reserves crisscross the landscape of the two communities. However, due to the increasing cropping close to the banks of the streams, some of them have become seasonal while others have their volumes significantly reduced during the dry season. A brief overview of the key characteristics of the studied Forest Reserves or GSBAs is presented below:

- Atewa Range Forest Reserve

The Atewa Range Forest Reserve or GSBA is found in the Eastern Region of Ghana within the East Akim District and covers an area of 215.7 sq. km (CIG 2002) (see Map at Annex 4). The natural vegetation of the range is classified as Upland Evergreen (MES 2002). They are found in mountainous areas and are therefore referred to as mount forests. They receive up to 1700mm of rainfall and are wet throughout the year, often forming forest clouds.

- Boin Tano Forest Reserve

The Boin Tano Forest Reserve covers a total area of 127.12 sq. km (see Map at Annex 4). The area demarcated as GSBA constitutes 49.5 per cent or a total area i.e. about 62.86 sq. km (CIG 2002). It is located in the Western region of Ghana in the Aowin-Nsuaem District. The natural vegetation of the Boin Tano Reserve is classified as Wet Evergreen (MES 2002). It is typical of the south western corner of the country. Annual rainfall here ranges between 1700 and 2030mm. Typical species include *Cynometra ananta*, *Tarrietia utilis* and *Tieghemelia heckelii*.

Both reserves are rich in flora and fauna and share several similar characteristics. They are, however, noted to differ markedly in floristic composition and structure. According to local oral history, the forest reserves provided the local people a wide variety of subsistence requirements and other benefits. The traditional uses include:

- Land for farming, bush meat, pestles (especially to pound *fufu* for visitors during funerals, in Jema), snails, fish, cane, rattan, wood for canoe, water, medicinal plants, food, firewood, mortar, twigs, chewing sticks.

Though some of the products obtained from the forest reserves could also be obtained outside the reserves, it was mentioned that it was much easier to obtain them from the forest reserves. According to local people this also ensured that too much pressure was not put on off-reserve lands which are already degraded.

Local economy

Farming is the dominant activity in the study communities with most people relying on farming as their primary source of revenue. Farming involves the cultivation of food and cash crops as well as animal rearing, especially poultry. Cocoa is the major cash crop and the main stay of the economies in both study communities. And as mentioned above, there is still high demand for forest lands for cocoa farming.

Small ruminants (sheep) and pig production are also popular. Apart from farming, trading and agro-processing provide the other major forms of livelihood. According to local people, there is little dependence on the forest for their livelihoods as a result of the government policy which set up the forest as GSBAs.

In Sagyimase, it was mentioned that the local economy in the past depended heavily on the on activities in the forest reserves including farming, hunting, logging, chainsaw operations and the collection of herbs and medicinal plants for sale. Similar activities prevailed in the Jema community but on lower scale as people still have access to forest products from community forests.

Emerging livelihood opportunities in both communities were mentioned to include artisanal careers including dressmaking, bakery and pastries, masonry, carpentry and auto repairing and servicing.

(picture removed)

Cocoa, the major cash crop in the study communities: Farmers drying cocoa beams at Jema near the Boin Tano Forest Reserve

Social characteristics

The key social institutions in the study communities are summarised in the Table 1 below:

Table 1: Local Institutions

Institution	Communities		
	Sagyimasi	Jema	Remarks
Traditional authorities	Akim Abuakwa Paramountcy	Enchi Paramountcy	The Paramount Chief is the overlord of the communities
Unit Committees	Available	Available	Decentralised structure responsible for local level planning
Churches	Available	Available	They seek the spiritual and socio-economic welfare of their members
Community Based Welfare Groups	Teak Growers' Assoc; Citrus Growers' Assoc; and Vegetable Growers' Assoc.	Farmers' Assoc; Market Women's Assoc; Bakers' Assoc; Dressmakers Assoc.; and Hair Dressers' Assoc.	They provide social and economic support to their members
Natural Resources Management Groups	CBAGs, Fire Volunteers, WATSAN	CBAGs, Fire Volunteers, WATSAN	

These institutions form the focal point for community development and natural resources management. For example, the local chiefs and elders have a lot of influence in the distribution, use and management of lands outside the forest reserves. They ensure compliance and impose sanctions on those who flout local rules and regulations on natural resources management. Some churches operate credit schemes for their members or link members to rural banks to access credit. For instance, the Presbyterian Church at Sagyimase operates a credit scheme for women members.

The social infrastructure in the communities is basic and inadequate. The most important is educational facilities at the first cycle level. Other social infrastructure are summarised in the table below.

Table 2 : Social Infrastructure

Facility	Community		Remarks
	Sagyimasi	Jema	
Educational	Pre-school, Primary, JSS	Pre-school Primary, JSS	
Health	Nil	Nil	
Water and Sanitation	Boreholes, Stream, No public Toilet	Boreholes, Stream,	There is a public toilet under construction at Jema
Community Centre	Nil	Nil	
Electricity	National Grid	National Grid	
Telecommunication Centre	Privately owned	Privately owned	
Funeral/Public durbar grounds	Available	Available	

The priority social development needs mentioned at Sagyimase were: potable water (boreholes) and skill training (vocational) school. The women stressed on credit for trading, snail rearing, soap and batik making. They considered an amount between ₦2,000,000 and ₦3,000,000 to be adequate to set up an alternative livelihood.

The social infrastructural needs of the Jema community were health facilities and a Senior Secondary School (SSS). Women mentioned their needs as potable water, clinic and market.

Population

The population changes in the study communities between 1970 and 2000 and the corresponding inter censal population changes are summarised in Tables 3 and 4 (Ghana Statistical Services 2000). The population figures show significant increase in population for Sagyimase. This may be attributed to the continuous influx of migrants, especially from the Krobo ethnic group, who are said to have historically co-habited peacefully with the indigenous people as farmers. Also, the community has until recently attracted a lot of migrants who came to the community to seek a living on forest related livelihoods, especially illegal chainsaw activities. With the improved protection of the forest reserve in the community, most of these migrants have become unemployed while others are plying their trade elsewhere.

Table 3: Population of Study Communities

Community	1970	1984	2000
Sagyimase	844	1524	2378
Jema	951	1352	2329

Table 4: Inter Censal Population Changes

Community	1970-1984	1984-2000
Sagyimase	60.19%	72.26%
Jema	60.25%	56.04%

The comparatively lower population change in Jema between the periods of 1984 to 2000 may be explained by the decline of the cocoa industry during the period. Also chainsaw operations are minimal. The major reason is the remoteness of the community and the poor access roads to major urban centres. It was elaborated that the longer distances in conveying the sawn timber to the comparatively lucrative commercial centres such as Accra and Kumasi with the likelihood of arrest by the forestry guards, and the high cost of transportation does not make the chainsaw operations attractive.

Local people estimate the current population of Sagyimase as 890. Migrants form about a third. Females constitute about 40 percent of the population. At Jema, the total population was given as 3500, with migrants constituting about 10 per cent of the total population. Females form over 50 percent of the population. The local population estimates may be underestimated or exaggerated due to lack of data or the belief that the higher the population the possibility of the community attracting more infrastructural facilities from the District Assembly or NGOs.

3.2 Types and scale of local benefits and their impacts

One of the major areas that the study covered was the assessment of the types and scale of benefits that local people derive (or may derive) from the Biodiversity Conservation Project. The project interprets **local benefits** as being *elements of project outcomes that directly or indirectly have positive impacts upon people and ecosystems within or adjacent to project areas and have tangible gains in the livelihoods of communities and the integrity of ecosystems* (GEF 2003). The definition identifies five categories in improvement to livelihood capital which can be seen as the core of local benefits in global environmental projects:

- Improved access to natural capital
- Increased livelihood opportunities, income and financial capital
- Improved social capital, equity and institutional capacities in local communities
- Improvement to physical capital

- Improvement to human capital

The local people's understanding and perception of benefits of such projects include the provision of socio-economic infrastructure such as health facilities, schools, skilled training, credit, potable water and markets. Local people also indicated access to the forest to do taungya and access to collect essential NTFPs. The underlisted constitute the summaries of discussions in the study communities on the types and scale of benefits from the project:

Improved access to natural capital

Local expectations from the project include:

- Access to land in the forest for farming: In both communities land is becoming scarce both for farming although it is more acute in Sagyimase. In this community, the reserve boundary is too close to the built-up area. The last house of the settlement is now at the foot of the forest. The people are now asking for a little push of the forest to allow some space for building. Land hunger in the town is very imminent. It should be noted that there are admitted farms within the forest reserves which are monitored regularly to ensure that farmers do not go beyond their boundaries.
- Access to timber for construction: Wood products for construction are not only expensive but difficult to get in the communities. These are usually purchased from the district or regional capitals. It is the anticipation of the local people that under the project they would have easy access to timber product for construction. For example, at Jema, it was mentioned that some 'mobile sawmills' have been given concessions in off reserve forests to produce wood product for sale to the local people. This is on pilot basis and local people indicated that more of such mills should be allowed by the FSD to operate to meet the growing demand for timber products for construction.

Benefits that local people mentioned as the direct result of the project due to the improvement in the natural resources management include:

- Access to NTFPs: Under the project the communities have not been denied access to NTFPs. In both study communities, it was indicated that as a result of the awareness created by the CBAG on the GSBAs they now have clear understanding of their rights and responsibilities as fringe communities. Resources taken from the forest were listed as follows: water, medicinal plant, food, firewood, bush meat, snails, pestles and mortar, twigs, rattan, chewing sticks. All community members have limited access to these resources i.e. for domestic use only and not on commercial scale. To curtail abuse of these rights and to ensure sustainable utilization of these resources, it was suggested that the permit system should be well monitored by the FC. Both women and men ranked water first and food second. Fuelwood was amongst the priorities of women.
- Prevention of rainstorms and vegetation improvement: Local people attributed the improvement in the rainfall patterns and other microclimate improvements (reduced intensity of sunshine, rainstorms, etc) to the project. The maintenance of

the forest and reduced illegal logging in off reserve forests lands were cited as major contributory factors to the improvement in the local weather conditions. In Sagyimase it was mentioned that tree planting of degraded areas in the forest reserve by the project has offset the encroachment of grass into the forest. Thus the original forest cover has been restored. They also emphasised that the drying of river bodies has ceased and water volumes are increasing gradually because farming along water bodies has minimised. At Jema, the improvement in the forest cover is also believed to ‘trap’ diseases from entering the community. They perceive that forest serves as a filter of certain diseases.

Case Study 1: Benefits households derive from the forest reserves: A case of a family at Jema

Rockson used to hunt in the forest reserve for bush meat to supplement the protein requirements of family. He has stopped because of restrictions on entering the forest. The family now has to buy all their protein requirements.

The family also used to obtain firewood from the reserve. The wife now has to buy 10,000 cedis worth of firewood for baking. “One cannot easily obtain firewood from fallow lands” was lamented by Rockson. He thinks the government should allow portions of the forest reserve for farming to reduce the poverty in the community.

But they believe that the protection of the forest reserve will improve the health

Increased livelihood opportunities, income and financial capital

For the project to be sustainable local people asked for compensation through alternative sustainable livelihoods. Alternative livelihoods mentioned include:

- Animal rearing (poultry production, sheep, pigs, grasscutter rearing etc).
- Tradesmen (carpenters, electricians, masons, barbers, auto-mechanics, plumbers, auto-electricians, and fridge mechanics). Several local young men have learnt these trades but lack the capital to buy tools and set up their shops.
- Tour guides. Local people want employment as tour guides if tourism is developed out of the project as well as security workers in the forest reserves such as the Forest Guards
- Processing and adding values to NTFPs
- Trading
- Cassava processing
- Cooked food selling

Local people are aware that the project will provide credit for them to start some of these sustainable livelihoods. In both communities emphasis was placed on animal rearing, especially pig production. There are high expectations for the CIF especially for animal rearing including new production areas such as grasscutter rearing. At Jema, it was

indicated that animal production in the community will substitute for game they need from the forest reserves. But lack of veterinary services and capital were major constraints.

Sustainable livelihood such as soap making, powder making, snail rearing, batik/tie and dye making were suggested by women at Sagyimase. They mentioned that between 2 to 3 million cedis should be enough to set up a business in any of these livelihoods. They also asked for the release of land from the reserve to enable them participate in the President's Special Initiative on cassava production. In both communities cassava production and processing are important economic activities. Cassava mills are therefore important priorities of the people. At Jema, it was emphasised that the establishment of a cassava mill in the community will discourage farmers from selling their produce in far away Elubo market at low prices. It is believed that when an outlet is provided for cassava processing several farmers in the community and its catchment will go into its production to feed the mill. Some respondents also expressed interest in the large scale production of rice if they can get access to credit.

It must be noted that in situations where local people are engaged in alternative livelihoods such as carpentry, dressmaking, bakery, etc, they are frustrated by frequent power outages. For example, at Jema power outages was mentioned as a major disincentive for engaging in such trades. It was emphasized that regular supply of electricity will enable them to expand their businesses.

Case Study 2: Family's livelihood

Farming is the main occupation of Charles Nkrumah and his wife, Juliana, at Sagyimase on the Fringe of the Atewa Range Forest Reserve. Charles is a tenant cocoa farmer, *abunu* sharecropper i.e. he obtains 50 percent of the proceeds. He expects to earn an income of 300,000 cedis from the cocoa farm this year. According to the respondent, the farm is about an acre and he intends to enlarge the farm in the coming years because of the recent increases in the producer price of the crop. He also has a 2-acre food crop farm (plantain, cocoyam and vegetables). This is mainly to meet the food and other subsistence requirement of his household of 5, and only surplus is sold. He earns an average of 100,000 cedis from the farm per annum.

Charles also works as a past time hunter. The common animals he obtains are duikers, "Oha", "Adabo". The family consumes greater part of the game he hunts. On the average, Charles can make about 250,000 cedis if he is lucky to get a duiker. But he explained that duikers and other game are "finished" outside the forest reserve. Income from the hunting is therefore not reliable. He emphasised that the recent strict protection of the forest reserve as a result of the activities of the CBAG in the community has prevented local hunters from entering the forest where they could easily obtain game for both household consumption and for sale.

In the past, Charles used to work as a "Shaker" i.e. a porter of sawn timber by illegal chainsaw operators in the forest reserve. This was in the early 80's when the Government of Nigeria repatriated illegal aliens. He and a lot of the returnees found the business a lucrative one because the income was comparatively better than farming and was quick. He abandoned the livelihood because of its risky nature. But Charles contended that most of his colleagues and other local young men still engage in the illegal timber felling activities because there are no alternative livelihoods and also the business is still comparatively very lucrative.

In addition to working as a "Shaker" in the forest reserve in the past, Charles also worked as a returnee taungya farmer. His household had enough food to eat and sell from the proceeds from the taungya plot. However, most of the farmers who were allocated lands in the forest did not comply with the taungya rules i.e. they failed to plant and nurture the timber tree. Consequently, the community was stopped by the FSD. This adversely affected his family's income and food supply. But Charles was happy to note that the community has once again been allowed to do taungya this year under strict supervision and sanctions (expelling of recalcitrant farmers and their denial of access to harvest the planted food crops).

Charles is assisted on his farms by his wife and two other adult female children. His sons work in other urban centres and only visit on festive occasions. His wife, Juliana, expressed interest in trading in frozen fish to supplement the income of the household but does not have the capital to start the business. According to her, she needs about One million cedis (about US\$120) to start a lucrative business in fish trading. Local credit providers are demanding a deposit of 200,000 cedis to enable her access the amount. In addition, she has to pay the principal plus an interest of 200,000 cedis within a period of six months i.e. about 50,000 cedis a week. This is beyond the capability of the family, hence Juliana has not applied for the credit. She emphasised that some of her friends who obtained the credit are finding it difficult to repay.

The family admits that the idea of protecting the forest reserve is good because the forest helps to improve rainfall, maintains the volume of flow and of the steams in the community and would be bequeathed as a legacy to the posterity. However, alternative sustainable livelihoods should be provided for both men and women in the community because they will lose access to the resources in the reserve.

Improved social capital, equity and institutional capacities in local communities

The study communities had existing CBOs before the project such as Traditional Authorities, Unit Committees, Churches, and Community Based Welfare Groups Natural Resources Management Groups. The formation of the CBAGs has strengthened the interrelationships amongst the CBOs. This is due to the representation of the other CBOs on the CBAGs. In general the project has led to the following:

- Reduced litigation arising from encroachment of forest resources. The environmental education by the CBAGs has drastically reduced illegal activities in the forest reserves. Originally, this was a source for confrontation between the CBAGs and the other community members including the kith and kin of the some of the CBAG members. The led to insults, conflicts and stigmatisation of some of the members of the CBAGs. This created social tension which affected community cohesion.
- Concessionaires have been awakened to their social responsibilities and obligations.
- The community members have become aware of their rights and responsibilities in the management of the forest reserves. Such as the patrolling of the reserve to scare off illegal chainsaw operators and those who gather NTFPs without permits.
- The project has not discriminated against women in the formation of the CBAGs and also as beneficiaries. However, the numerical strength of the sexes is skewed towards males.

Improvement to physical capital

In terms of physical infrastructure, the project has not set up any facility. The expectations of the communities include:

- Health facilities.
- Junior and Senior Secondary School
- Potable water
- Market
- Public places of convenience

Land from the forest reserves for farming is another physical capital that the project communities expect to benefit from. This was particularly highlighted at Sagyimase where land hunger is imminent.

The communities also expect the project to provide the following tools, machinery buildings:

- Cassava processing machines
- Tool for artisan (carpenters, auto mechanics, dressmakers, bakers, plumbers, electrician)
- Shelter for livestock production and grasscutter rearing

Local people are also expecting that the project would facility their acquisition of equipment to process NTFPs. A related need mentioned at Jema in terms of processing of forest products was the establishment of sawmills at the local level to produce wood products to meet their building and other construction needs. It was indicated by the Aowin-Nsuaem District Deputy Forest Manager, the forest district which has jurisdiction over the Boin Tano forest reserve, that the FC is piloting mobile sawmills in the district to meet the local demand for timber and wood product. The millers have been given concessions in the off reserve forests. The objective is to encourage local people not to resort to illegal chain saw operators to meet their requirements for timber and thereby reduce the pressure on the forest reserves.

Improvement to human capital

In term human resource development at the local level, the project has concentrated its activities on members of the CBAGs. They have been given various forms of training in conservation, protection and management of the GSBAs (see section 3.4). The members are expected to impart the knowledge gained to other members of their communities. In both study communities, the CBAGs have undertaken awareness creation on environmental development issues including the need to protect the GSBAs.

It was indicated in both communities that the project has helped the CBAGs and the community members in improving their decision making on the forest management. Local people confirmed that they see the FC staff as partners in the management of the forests.

Other training needs expressed by the local people include the following:

- Skill training in artisanal trades (masonry, carpentry, dress making, auto-repairs, etc)
- Training in animal rearing (piggery production, grasscutter rearing)
- Beekeeping
- Fish farming
- Processing and adding value to NTFPs

It is worth noting that local people, especially the youth, attach importance to these training and expect the project to provide them or facility their delivery. In Sagyimase, for instance, it was mentioned that the project should set up a Skills Training Centre to enable the numerous youth who used to derive their livelihood from the forest reserves to find sustainable alternatives such as those mentioned above. In both communities it was emphasised that those who receive training should be assisted with tools and or seed capital to set up businesses and the people belief that this will tremendously reduce local pressure on the forest.

The impact of the project on the resilience and vulnerability of local communities

The level of resilience varies from household to household and is determined by the livelihood of households. It was observed that the landless have weaker resilience to the changes that the project has engendered with regards to access to land and forest resources. This is evidenced by increasing resort to sharecropping to meet the demands of food requirements of households. This is peculiar to Sagyimase where local people emphasised that land for farming has become very scarce and land hiring and sharecropping have become the predominant tenancy arrangements. Majority of people in the community who previously relied on land in the forest as a source of livelihood (especially chainsaw operators, hunters and farmers) but have now lost easy access to forest resources and lands have become unemployed. In view of this, the CIF component of the project which aims at establishing the people in alternative sustainable livelihoods if it is not implemented soon would increase hardship of this group of people. It was observed that some of these people have resorted to stealing of farm produce for survival.

Generally, local people fear that complete ban on entry to the forest reserves will increase their vulnerability in terms of loss of vital subsistence needs (medicinal plants and herbs, forest foods, building material, etc) alternatives of which are difficult to obtain outside the reserves. They intimated that a complete ban may push the local people into livelihoods that also have negative environmental impact such as intensive use of off reserve lands and areas close to rivers for farming that may eventually lead to degradation and pollution of water bodies.

Furthermore, the resilience of the people is influenced by education and awareness creation of the effect of wanton destruction of the forest on the lives people lives and the fear arrest and the resultant sanction. Because of the closeness of the communities, people are aware of what their neighbours are doing. This influences people's behaviour and attitude towards rules and regulation on natural resources conservation and management.

The project has led some institutional changes at the local level. The formation of the CBAGs has enhanced local participation in decision making at the local level especially on enactment of bye-laws for protection and management of forest reserves. In the East Akim District Assembly the CBAG has representation on the Environmental Subcommittee. This has contributed to the empowerment of the local institutions in the decision making at the both the community and district level. This has reduced their vulnerability in decision making since they are now part of the decision body.

3.3 Perceptions of local people on benefits and impacts

People's perceptions on the project benefits were varied. The benefits enumerated are:

- Afforestation and rainfall patterns have improved. Re-forestation of the degraded areas within the reserve has improved the structure of the forest. In Atewa Range degraded portion have been replanted by the local people under the supervision of the CBAGs and FC staff.
- Illegal tree felling and group hunting have reduced. For example, people no longer sell game along the roads. There are frequent checks on chop bars to verify whether they serve game. This has reduced hunting. Local people have the right to collect NTFP including game for domestic use.
- Reduction in seasonal water shortages. Rivers are now perennial.
- Reduction in inappropriate methods of fishing. The use of poisonous chemical in fishing has ceased. This has prevented diseases such as cholera and dysentery.
- Alternative sustainable livelihood. Because of the protection people have started alternative livelihoods such as piggery, fish farming and poultry.

Some of the negative impacts of the project were listed as the following:

- Limited access to NTFPs. Hardships has occurred because they cannot enter the forest to collect things that they used to supplement their living; they now have to substitute fish for game such as grasscutters. The price of game (rat, grasscutter, etc) has increased. For instance, the price of a medium sized rat has increased from two thousand five hundred cedis to twenty thousand cedis.
- Loss of access to farm lands in the forest reserve. They think the government should allow portions of the forest reserve for farming to reduce the poverty in the community. Farm lands close to the community are exhausted and land for farming is generally scarce. Land available for farming is all close to the reserve. It is believed that the forest reserves have created shortage of land for farming, especially land for cocoa farms.
- Loss of job opportunities such as hunting, chainsaw operation and farming in the forest areas.
- Increase in seasonal out-migration by the youth. Those who depended on the forest reserves for the livelihoods have relocated to other communities to pursue their businesses
- Thefts of farm produce have increased due to loss of opportunity to farm in the forest reserves and therefore reduction of incomes. There is also an increase in landlessness with its resultant effect in long term reduction in food security in the local area.
- Stigmatization of CBAG members. At the initial stages of the project implementation in the communities, CBAG members were viewed with suspicion because of their collaboration with the FC. Although this attitude has waned some CBAG members are still considered “traitors” especially by those who were involved in the illegal chainsaw operations. This created social tension which affected community cohesion

Local people perceive those who the project impacts will affect most and how as the following:

- Males: Those who derive their livelihoods from chainsaw operations will suffer most because chainsaw operations in the forest reserve still serve as their major source of income. At Sagyimase it was indicated that it is this income which runs the local economy and thus everybody in the community will be affected.
- Migrants: It is perceived that if the local communities are completely denied access to land in the forest reserve for farming migrants will be the most affected. At the moment migrants can only obtain land for farming by sharecropping.
- Youth: The plight of the youth will worsen if there is complete ban on the entry into the forest reserves because of their dependence on the forest reserves for their livelihoods. They derive “quick” income from the chainsaw operations.
- Females will also lose products such as cocoyam, rats and grass cutters which can be obtained from the forest. In addition, the vulnerability of females will be worsened in that females’ dominated and participated professions such as hairdressing, dressmaking and cooked food selling will be adversely affected. It is perceived that a total ban on the use of the forest would affect women more than the men because they gather fuel wood, food and other NTFP for the upkeep of the household. Women may find it very difficult to gather these resources from elsewhere.
- Female headed households who are the sole bread winners of their household members who would be hard pressed since they have limited opportunities to derive income.

3.4 The nature of links between local benefits and the attainment of global environmental benefits.

The local benefits and their links with the attainment of the global benefits portray a relationship which suggests that what at the level is positive benefit could adversely affect the quality of the global environment and vice versa. The underlisted are the major areas:

- The ban on the illegal chainsaw operations which used to be the major sources of cash income for the people has resulted in the loss of other livelihoods. The acute unemployment that has resulted from this has affect the local economies. However, local people admit that the forest reserves have recovered some of their original form and structure and this has contributed to climate improvement (good rainfall, reduced intensity of sunshine).
- The introduction of sustainable alternative livelihoods. The training to be received by the CBAGs in animal production, fish farming, beekeeping, nursery establishment and tree planting are considered by the communities as local benefits in terms of livelihood opportunities which will lead to poverty

reduction and decreased vulnerability. It was mentioned that this would also reduce local dependence on the forest reserves as a major source of livelihood.

- Limited access to NTFPs and reduced access to land in the forest reserves for farming. As much as the local people recognise the importance of the NTFPs in their household economy, especially for food security, they accept the fact that restrictions on access would curtail the extinction of valuable species and lead to sustainable utilization of the forest and wild resources. This will contribute to the attainment of global biodiversity conservation.

(Picture removed)

A former chainsaw operator at Adadientem displaying his old saw. Operators now use modern engine powered chainsaw machines (see case study below).

Case Study 3: ADADIENSTEM CBAG

Respondents: Mr Kwasi Andoh , Mr. Akwasi Darkwa, Mr Kwaku Larbi and Margaret Asante.

The chairman of the local CBAGs, Mr Kwasi Andoh was a former chainsaw operator who plied his trade originally in Republics of Benin and Togo. When he realised the job was no longer lucrative in Togo, he returned to Ghana in 1983 and worked still as an operator till 2001 when he stopped to enter into farming, rearing of livestock. Before this, he first worked with timber firms in legally acquired concessions before coming home to work in the Atewa Range Forest Reserve as illegal logger for three years. He entered into farming because he realised the operator job was becoming increasingly risky but less rewarding. He also realised that the forest was getting depleted and posterity needed to also enjoy the forest. He again feared he could be arrested by either the CBAG or the Forest Guard, members of which were younger than he was. If he got arrested by such people they could molest him and disgrace him. There was therefore both internal and external factors that led him to give up operating in the forest.

Mr Andoh was a 'Sawyer' who used the manual saw. According to him if motorised saws had not been introduced, the use of the manual saw could have led to a sustainable harvesting of the forest. It took about a week to finish work on a tree with the manual saw whereas the mechanised saw could work on ten trees per week.

When he left the illegal logging he joined the local CBAG and also started a small poultry farm but realised snakes were preying on them so he decided to go into piggery. He appealed to the local chief of the town to offer assistance. The chief, who is a cousin to him, had already been trying to convince him to stop the illegal activities so it was with pleasure that the chief agreed to his request. The chief is enlightened and values environmental issues. He offered him two hundred thousand cedis (¢200,000.00) to purchase the seed animals. Two animals, a sow and a boar, were purchased as parent stock. He later realised that it might be helpful for him to get the members of the CBAG to join him in the venture so it would become an alternative means of livelihood for the CBAG members. The CBAG started with five people. Two left them because the work was purely voluntary but they were expecting monetary returns. The animals are now one and a half years old and have produced seven litters two of which have been sold to offset expenses. The main constraints to the project have been high cost of feed and the inability to raise money to purchase them. Lack of proper shelter was also mentioned as a major problem. They want to expand the pen of the animals but they do not have the money to do so. They said they may need about fifteen million cedis to rehabilitate and expand the programme

Benefits from the project would be shared into three: one part to the chief who gave them the seed money, one part to the members and the other part for the upkeep of the animals. They expect to receive assistance from the Community Investment Fund (CIF) to expand the project.

- Restriction in forest lands for farming. The control of farming activities within the reserves has been highlighted by the local people as having negative socio-economic impact on their lives because fertile land for farming in the communities have become limited. The overexploitation of community farm lands is leading further and low yields. But the restriction on forest reserve lands for farming has lead to the conservation of the forest reserves with resultant positive effect on vegetation and climate improvement. However, the permission of local people to do taungya in the degraded areas of the forest reserves is helping in the afforestation of the degraded areas.

- Collaboration with local institutions. Education and awareness creation of the project objectives and components have improved participation of the local people in natural resources management. It has also given exposure to members to training programmes within and outside the forest districts. Topics treated such as group formation and forestry operational guidelines have improved the knowledge base of the beneficiaries. This has enhanced local participation in decision making at the local level especially on enactment of bye-laws for protection and management of natural resources. This has contributed to the empowerment of the local institutions in the decision making at both the community and district level.
- Changes in consumption patterns: The restriction placed on hunting has compelled local people to substitute game with fish and poultry. Certain forest foods such as cocoyam are no longer readily available and the local people have resorted to less favoured food crops such as cassava. The change in consumption pattern has led to the preservation of game and wildlife.

3.5 The appropriateness of project strategy

The project main strategy at the community level is to ensure the active participation of the local people in the conservation, protection and management of the GSBAs. Two main approaches have been adopted by the FC: formation of the Community Biodiversity Advisory Groups (CBAGs) to enhance community involvement in the management of the GSBAs; development of alternative livelihoods through the provision of financial support to communities whose livelihoods depend on the forest and who can engage in other identified ecologically sustainable livelihood will be supported by a community investment fund (CIF). Below are summaries of how these strategies have been implemented at the community level:

3.5.1 The CBAGs

Formation of CBAGs:

In both communities the CBAGs were formed about four years ago. In the Atewa Range the CBAGs consist of 27 cells (i.e. communities which have CBAGs) including Sagyimase and Adadientem. In the Boin Tano Reserve there are 5 cells including Jema and Akoako. The CBAG in the latter community no longer functions due to inadequate transport allowance (30,000 cedis) paid to them for meetings.

The members of CBAGs were chosen at community forum. Each community was restricted at the beginning by the FC to start with five members. Some of the cells are now ten in number. In both communities the composition of the CBAGs includes representation from the Traditional Authorities and the Unit Committees. These two institutions are the most influential at the local level in terms of politics and land and natural resources management. Other members were supposed to be devoted community members. But in all instances, the members voluntarily accepted their membership of the

CGBAs. This approach according to the CBAGs has been very beneficial to the survival of the CBAGs because members understand that membership is non remunerative in terms of wages or salaries but purely voluntary.

The organisational structure of the CBAGs is made up chairman, secretary and treasurer positions and the ordinary members. The executive positions are elective and they have the responsibility for the day-to-day organisation of all the cells in the communities that fringe the GSBA. At the cell level are the contact persons who have the responsibility of organising the group. The executive positions are dominated by men and where even there are women, they mainly hold the position of a treasurer which is perceived as the role of a woman.

In both study communities it was observed that female membership was low. For example, of the entire 60 members of the GSBA of the Boin Tano Forest Reserve, women constitute about 15, about 25% of the total membership. Out of the 150 members of the Atewa Range CBAGs, women constitute 25 per cent. Male members of the CBAGs conceded that it was not good for the enhancement of gender equity and benefit in natural resources management. However, it was mentioned that the women did not offer themselves initially for membership for reasons such as the work involved in patrolling forest reserves may be tedious and risky, especially during patrol when they have to climb over hilly areas. Also, the information about the CBAGs got to the men first so they took advantage. It was explained that the women also wanted to avoid heckling and uncalled for insults that are too rampant with the job.

Objectives and activities of CBAGs

The CBAGs were formed mainly to serve as link between the FSD and the fringe communities for the protection of the forest reserves. Their specific activities include:

- Creation of awareness on importance of forest, and the impact of illegal activities on the forest reserves. To ensure that the future generations are environmentally conscious the CBAGs do a lot educational campaigns in the local first and second cycle schools. For example, the CBAGs at Atewa Range have started tree plantings completion for the local schools.
- Preservation: The main activity under preservation is to patrol the protected areas to prevent intruders and encroachers. They also do boundary clearing to demarcate the protected areas from the adjoining lands. There is also planting of trees along water bodies
- Conservation: Set up nurseries for reforestation of depleted areas. The CBAGs are allowed to go into the forest to collect seeds for the establishment of necessities. The seedlings are purchased from the CBAGs by the FSD.
- Management: The CBAGs are involved by the implementation of the FC guidelines and programmes for the management of the GSBA.

The concept of gender roles became manifested in the performance of the above activities. For example, women were involved in the collection of seeds for the nurseries

and watering the seedlings. They also play a major role in the awareness creation due to their interaction with children, friends and other community members. The men dominate the more risky and tedious jobs such as patrol and clearing of the boundaries as well as the arrest of illegal operators.

It was observed in all the communities that most CBAG members are actively involved in the activities of their cells. The operations and concerns of the CBAGs are summarized in the case study below.

Case Study 4: Activities of CBAGs at the Atewa Range Forest Reserves

The main activities of the CBAGs are conservation, preservation and management of the forest reserves. Under conservation, the groups have set up nurseries of cideralla for replanting of the degraded areas of the forest reserve. They are also planting trees along water bodies. The establishment of nurseries were initially fraught with problems because there were not enough seedlings. The FSD allowed the CBAGs members to collect seeds from the forest reserves to set up the nurseries. The seedlings are purchased from the CBAGs by the FSD to give the members some income.

Under preservation, the members patrol the protected areas to prevent intruders and encroachers. They also do boundary clearing to demarcate the protected areas from the adjoining lands.

The CBAGs, collaborate with Range officers and Forest Guards, Chiefs and elders, and other community based organisations and institutions that undertake related activities including the Okyeman Foundation and local churches Initially Chainsaw operators and illegal farmers and hunters were not involved in the activities of the CBAGs but later some of them were convinced to support the project and the activities the CBAGs. They could not join initially because they thought the project was against their economic interest. It took some convincing with promises of benefit before they could join in.

The management activities also entails advisory role on the local planning and management of the forest reserves. They are also doing awareness creation in all the fringe communities and educational campaigns and tree planting competitions amongst the first cycle schools. The CBAGs in the Atewa Range intend to first

All the main activities under the project are ongoing

Training and education received by the CBAGs

The training received by the CBAGs includes:

- Training in conservation, preservation and protection. These include training on the roles and regulations of the FSD, forest inventory, nursery establishment and tree planting
- Collection, processing and communication of information
- Report writing
- Planting practices and nursing of indigenous species
- Social responsibility of concessionaires and concessions in the GSBAs

Training yet to be given by the FSD are on sustainable livelihoods (grass cutter rearing, beekeeping, snail rearing and animal production) They also suggested training of the youth in alternative livelihoods such as carpentry and masonry, and dressmaking, soap making and bakery for young females.

Needs and concerns of the CBAGs

The logistics provided by the FSD to the CBAGs are mainly for the patrolling of the forest reserves. These include Wellington boots, Identity Cards, T-Shirts and cutlasses. It was emphasized that not all members of the CBAGs received these items because they were not adequate. Those who did not get some were aggrieved and some have withdrawn from the group. Other operational needs expected include:

- Uniforms
- Raincoats
- Insurance cover
- Credit to expand farm activities and trade
- Means of transport for patrolling
- Communication gadgets (walkie-talkies)
- Food for work i.e. supply of essential food items (rice, sardines, edible oil, etc) during the lean season
- Payment of regular financial allowances (either monthly or quarterly)

The concerns expressed by members of the CBAGs centred on payment of travel and transport allowances (T&T) and the delay in the disbursement of the CIF. The CBAGs indicated that due to inadequate allowances, participation at meetings has waned and this is affecting the active participation of members. It was suggested that transport allowances must be tied to distance and actual transport costs.

The main concern of the CBAGs is the delay of the disbursement of the CIF which they mentioned threatens local participation in the project and the dissolution of the CBAGs

3.5.2 Sustainable alternative livelihoods and the CIF

A key consideration of the project is that the establishment of the GSBAs will cause the loss of benefits and royalties to forest fringe communities. Therefore, it included in its strategies the establishment of a community investment fund (CIF) to support and promote sustainable community-based enterprises in the affected forest fringe communities as a way possibly mitigating such losses. The provision of an accessible credit facility will assist affected communities to develop and undertake ecologically sustainable ventures that can support long-term livelihoods. These alternative economic enterprises will enhance support for biodiversity conservation in the forest areas.

This idea was sold to the CBAGs and the entire communities at the initial stages of the project. In both study communities this was confirmed and local people perceive this component of the project as the most important. However, the disbursement of the fund has been delayed. This was attributed to rejection of the initial proposal for the disbursement of the fund by the donor agencies which are supporting the project, especially the World Bank. At the time of undertaking the studies, the FSD had asked another consultant to do fresh proposal for the disbursement of the fund.

However, it appeared that there had been an information gap in this respect and the CBAGs and the communities were becoming apprehensive and suspicious of the intentions of the FSD. The delay is creating some frustrations among the CBAGs. The members of the CBAGs are also worried about the delay because the expectation of some members and the entire community are very high and the continued delay may have adverse consequences for the project. They mentioned that it may lead to the dissolution of the CBAGs and encroachment on the forest reserves. These issues were strongly emphasized at Sagyimase where the community used to depend very much on the Atewa Range Forest Reserve.

In spite of the above set backs to the fund, local people intimated that it would enable them to establish alternative livelihoods including:

- Poultry and livestock production (pigs, sheep, goats and chicken)
- Grasscutter, rearing
- Beekeeping
- Mushroom production
- Fish farming
- Processing and adding value to NTFPs

Others livelihoods mentioned, especially by the women, included trading, soap making, processing of oil palm fruits and dressmaking. Some men mentioned the use of the fund for the expansion of their farms and other commercial businesses including trading. They therefore requested that they are given training in these alternative sustainable livelihoods

Although no strong indications of diversion of the fund were established, it must be mentioned that the possibility of using the fund for ecologically non-friendly economic ventures is real. This is because local people are aware of instances that some local people who benefited from credit facilities which were tied to specific project related activities had difficulties in paying back because such economic ventures did not give quick and adequate returns. For example, at Sagyimase, a case was mentioned of a Church credit scheme for women which resulted in several of the women having difficulty in paying back the credit because they did not derive much income from the project related activities. At the end they resorted to other alternatives, including trading, to pay back the loans. It must be noted that some of the ecologically friendly economic ventures mentioned are risky (poultry and livestock production) given the production practices in the study communities while others may have long gestation periods.

3.5.3 The capacity of the community to use the CIF

In both communities, the CBAGs members indicated that they have not received any training related to sustainable livelihoods under the project. However, some individual members said they have learnt sustainable livelihoods on their own and wish to use this expertise when they receive the fund. Some indicated that they have knowledge in vegetables, poultry and livestock production. In fact some CBAGs have already started some sustainable livelihood ventures on their own and are waiting for the fund to expand their activities. For example at Adadientem on the fringe of the Atewa Range Forest Reserve, the local CBAG has already started a piggery project which they hope to expand when they receive funding from CIF.

(Picture removed)

The Piggery Project of Adadientem CBAG

And as indicated earlier, the CBAGs are expecting the FSD to give them training on alternative sustainable livelihoods to enhance their capacity to use the fund. The members are willing to impart this expertise to other community members who would also benefit from the fund. The CBAGs are aware that the entire community would benefit from the fund and the capacities of non members should also be built in anticipation of the disbursement of the CIF. They are expecting training on grass cutter rearing, beekeeping, snail rearing, mushroom and livestock production. They are also their training on other alternative livelihoods such as carpentry and masonry, and dressmaking, soap making and bakery.

On the modalities for disbursement of the CIF the following were suggested by the CBAGs

- The money should be disbursed to groups if it is not sufficient to be given to individuals.

- The fund should be operated as a revolving fund and each member of the community would prepared to wait for his/her turn
- Groups which benefit should be held jointly responsible for the repayment of their individual members

In both communities, the people were very hopeful that the fund would enable them to improve their standard of living. For example, the women members of the CBAG at Jema said the incomes they would derive from the sustainable livelihoods would be used to support their husbands to look after the entire family. The men said they would use the incomes they would derive from the sustainable livelihoods to pay the school fees of their children and to meet the health care needs of their families.

3.5.4 The use of experiences from existing schemes

The project's two main approaches to get community involvement in the protection, conservation and management of the GSBAs as mentioned above were the establishment of the CBAGs and the setting up of a Community Investment Fund (CIF).

From the perspective of the establishment of the CBAGs, the project appears to have borrowed ideas from some related projects. For example, the Collaborative Resource Management Unit (CRMU) of the FSD has been implementing something similar in the forest reserves in the high forest zones which are not part of GSBAs. It has the concept of community contact and advisory groups known as Community Forest Committees (CFCs) which operate like the CBAGs. In fact, their functions and activities are very similar. It may be appear that the Biodiversity Conservation Project (BCP) adapted the CFCs as the CBAGs.

As indicated earlier, the formation of the CBAGs was strategic, particularly at the initial stages of the project. They galvanised the communities and the local people for the protection of the GSBAs although some community members, especially those whose livelihoods mainly dependent on the forest reserves, adopted a confrontational attitude towards the formation of the CBAGs and their members.

However, it appears that the Biodiversity Conservation Project (BCP) has run into difficulties in the setting up of the CIF. It has been delayed for over two years according to the project implantation schedule. Discussions with the National Project Coordinator suggest that the delay has arisen from the rejection by the project donors of the initial proposals for the setting up and disbursement of the fund.

There are numerous examples of credit schemes being operated by several sector ministries, departments and agencies which directly or indirectly relate to what the BCP is doing or want to achieve with the fund, which is the provision of funding for the setting up of sustainable livelihood for local communities due to loss of benefits and royalties as a result of the project. For example, the Village Infrastructural Project (VIP) is running a

demand-driven credit support for farmer groups who are engaged in sustainable livelihoods (MOFA 2003) and the CRMU of the FC is also supporting CFCs and local communities in similar alternative livelihoods (FC 2003) that the CBAGs and the communities that fringe the GSBAs want to do.

What ought to be emphasized here is that, the delay in implementing the CIF could have been avoided if a similar scheme had been adapted by the project. And as indicated earlier, the delay in the disbursement of the fund is undermining the enthusiasm of the members of the CBAGs and the local communities for the project.

4.0 KEY FINDINGS AND RECOMMENDATIONS

4.1 Key Findings

The key findings of the study are summarized as follows:

1. Key characteristics of the selected protected areas

The selected protected areas comprise fringe communities which have predominantly farming populations with history of dependence on forest resources such as fertile land for farming and non-timber forest products, including bush meat, for their sustenance. Illegal chainsaw operations were a major source of income in the communities which have little or no alternative sustainable livelihoods. The poor social and economic infrastructure as well as financial and human resource base limit the options and opportunities for development in alternative sustainable livelihoods. Therefore, the setting up of the GSBAs has limited the benefits they derive from the forest reserves but this has improved the preservation, conservation and management of the reserves.

2. Impacts of the project on the local population (human impacts)

In terms of livelihood effects, the field survey results suggest that CBAGs are causing some households to have significant problems in meeting their needs for forest products, especially local people and migrants who are involved in chainsaw operations. Migrants and poorer households are particularly affected by restrictions on forest product collection because whereas many indigenous people have private forests to provide for their needs, poorer households and migrants have fewer alternative sources to meet their needs.

The survey disclosed that local communities obtained some income from the collection and sale of forest product. The importance of forest income usually lies more in its timing than magnitude. It seldom accounts for a large share of household's total income, but it is often important in filling seasonal or other cash flow gaps.

Other project negative impacts on the local people revealed by the study include:

- Limited access to NTFPs and the hardships it has engendered because local people cannot enter the forest to collect resources that they used to supplement their living. People are now substituting bush meat for fish and poultry products
- The GSBAs has created shortage of land for farming, especially land for cocoa production, the main stay of the local economies.
- Loss of job opportunities such as hunting, chainsaw operations and farming in the forest reserves which provided the only viable alternative livelihoods
- Relocation to other communities by the youth who depended on the forest reserves for the livelihoods
- Thefts of farm produce has increased due to loss of opportunity to farm in the forest reserves

In spite of these costs, the survey results showed that the project has made some benefits and gains in human development:

- Environmental education by the CBAGs has reduced illegal activities in the forest reserves which was a major source of litigation and social tension in the communities
- Concessionaires have been awakened to their social responsibilities and obligations to the local communities
- Community members have become aware of their rights and responsibilities in the management of the forest reserves

3 Impacts of the project on the local environment (environmental impacts)

A key observation of the study is the fact that conditions of the forests have improved since the FSD set up the GBSA and adopted collaborative forest management approach particularly the setting up of the CBAGs to serve as community contact and advisory groups to get local participation in the management and development of the forests. The areas in the forest reserves planted and improved are in marked contrast to the general deterioration of other nearby forests outside the reserves. The improvement is the consequence of the sustainable management regimes and enforcement of forest protection and resource conservation rules and regulations in the forest communities. Local people admit that the project environmental impacts have been in the following areas:

- Afforestation and rainfall patterns have improved.
- Illegal tree felling and group hunting have reduced.
- The seasonal reduction of volumes of water bodies have subsided
- The use of poisonous chemical in fishing has ceased. This has prevented diseases such as cholera and dysentery.

4. Project's local impacts and their contributions or detriments to the attainments of global environmental benefits

The field studies revealed that, what at the local level is positive benefit may adversely affect the attainment of global environment benefit and vice versa. The key areas identified include:

- The ban on the illegal chainsaw operations which used to be the major sources of cash income for the people is seen as negative impact of the project because it has resulted in acute unemployment. However, local people admitted that the forest reserves have recovered some of their original form and structure and this has contributed to local climate improvement (good rainfall, reduced intensity of sunshine, etc) which have positive implications for the global environment.
- The control of farming activities in the forest reserves has led to the scarcity of fertile land for farming in the communities and the overexploitation of community farm lands. But the restriction on forest reserve lands for farming has led to the conservation of the forest reserves with resultant positive effect on vegetation and climate improvement.
- The educational and awareness creation campaigns undertaken by the project in the communities has contributed to the empowerment of the local institutions in the decision making on the enactment bye-laws for protection and management of natural resources at the district level.
- The restriction placed on hunting has compelled local people to substitute game with fish and poultry. Also certain forest foods such as cocoyam are no longer readily available for their use and have therefore resorted to less favoured food crops such as cassava. But the local pointed out that the changes in consumption pattern have led to the preservation of game and wildlife.
- Due to the closely knit nature of the local communities which makes it easy for each member to know what their neighbours are doing, people's behaviour and attitude towards rules and regulation on natural resources conservation and management has improved dramatically by the educational and awareness creation of the effects of wanton destruction of the forest on the lives of local people. The resilience is further enhanced by the fear of arrest and the resultant sanction.

5. Appropriateness of Project strategies

The study showed that the two approaches adopted by the project to get local involvement were the formation of the Community Biodiversity Advisory Groups (CBAGAs) and the setting up of the Community Investment Fund (CIF) to provide financial support for alternative ecologically sustainable livelihoods to communities whose livelihoods depend on the forest reserves were appropriate but have had implementation shortfalls.

i Formation of and operationalization of CBAGs:

The study revealed that the formation of the CBAGs at the beginning of the project was strategic because it galvanised the support of the local people for the project although they faced some opposition from those whose livelihoods depended on the forest reserves, especially illegal chainsaw operators.

The survey also revealed that the emphasis on the voluntary nature of the CGBAs, which was initially emphasised by the project as the underlying principle for membership, has been very beneficial to the survival of the CBAGs because members understand that their activities is non-remunerative in terms of wages and salaries.

Female membership of the CBAGs was found to be low because initially they considered that the activities of the CBAGs may be tedious and risky, especially the patrolling of the forest reserves. Information about the CBAGs also got to the men first who took advantage. Women also wanted to avoid heckling and uncalled for insults that are too rampant with the job. But it was established that no conscious effort was made to substantially increase women membership.

The study revealed that the main activities of the CBAGs as:

- Creation of awareness on importance of forest
- Patrolling the protected areas to prevent intruders and encroachers.
- Boundary clearing to demarcate the protected areas from the adjoining lands. There is also planting of trees along water bodies
- Establishment of nurseries for reafforestation of depleted areas of the forest reserves.
- Participation in the implementation of the FC guidelines and programmes for the management of the GSBAs.

There is gender separation of the activities of the CBAGs. Women do most of the nursery works such the collection of seeds for the nurseries and watering the seedlings and play a major role in the awareness creation due to their interaction with children, friends and other community members. The men dominate the more risky and tedious jobs such as patrol and clearing of the boundaries as well as the arrest of illegal operators.

The formation of the CBAGs has enhanced local participation in decision making at the local level especially on enactment of bye-laws for protection and management of forest reserves.

The CBAGs have received training on forest management but they expect to be trained in alternative sustainable livelihoods

The study established that the CBAGs are active and performing well. The survey also revealed that the morale and performance of the CBAGs could be improved by meeting some of their concerns including the provision of logistics such as uniforms, raincoat,

insurance cover, means of transport, credit to expand farm activities and to trade, means of transport for patrolling, communication gadgets (walkie-talkies), food for work and payment of regular financial allowances (either monthly or quarterly). They also want training in sustainable livelihoods

ii *The Community investment Fund (CIF)*

The study revealed that the priority alternative sustainable livelihoods that CIF may be used for include: poultry and livestock production (pigs, sheep, goats and chicken); grasscutter rearing; beekeeping; mushroom production; fish farming; and processing and adding value to NTFPs. No training has been given to the communities on these livelihoods in preparation for the disbursement and use of the fund. But the survey revealed that some individuals have learnt sustainable livelihoods on their own and wish to use this expertise when they receive the fund.

It also established that women may use the money to do trading, soap making, dressmaking and other traditional livelihoods. Similarly, men showed interest in the use of the fund for the expansion of their farms and other commercial businesses including trading.

The study established the preference of the local people for the disbursement of the fund to be a revolving one, with priority first given to groups and second to individuals. Women groups or individuals should be given equal chance as men.

The study did not establish any strong indications of diversion of the fund. But it revealed the possibility of the use of the fund for ecologically non-friendly economic ventures. This is because local people are aware of instances that some local people who benefited from credit facilities which were tied to specific project related activities had difficulties in paying back because such economic ventures did not give quick and adequate returns.

The study established a strong felling of disappointment amongst the local people about the delay in the disbursement of the fund. It came out clearly in all discussions and interviews that further delay of the fund may threaten the survival of the CBAGs and adversely affect the conservation of the GSBAs. The study revealed that the delay could have been avoided.

4.2 Recommendations

Based on the identified key issues, the following recommendations have been proposed:

1. Strengthening of educational campaigns on the GSBAs

Local people are aware of the benefits that they stand to gain from the project and its cost to them. However, the linkage of the project to the sustainability of their livelihood systems and global environmental benefits are not well appreciated. Therefore, the project should organise more educational campaigns at the community level to deepen the understanding of the local people on the importance of the project. Also, the linkages or networks of illegal activities in the forest reserves such as the illegal chainsaw operations have a national dimension, therefore, the educational campaigns should not be limited to the local level but must be also be given a national focus. This may be facilitated through the national television, radio and the print media, seminars and workshops.

2. Expedite action on the setting and disbursement of the CIF

The field study showed clearly that the patience of the local communities is running out for the delay in the implementation of the CIF which was promised at the beginning of the project. To sustain community enthusiasm and their trust as well commitment to any future involvement in similar projects, the disbursement of the fund should be implemented within the shortest possible time.

3. Organise training programme on relevant sustainable livelihoods for CBAGs and community members

The CBAGs and the entire communities claim that they have not received any training in sustainable livelihoods although some people including members of CBAGs have knowledge on some sustainable livelihoods activities. To forestall the diversion of the funds they will receive under the CIF, the project should organise training workshops for the CBAGs and other members of the communities. Alternative sustainable livelihoods that training was requested are:

- Poultry and livestock production (pigs, sheep, goats and chicken)
- Grasscutter rearing
- Beekeeping
- Mushroom production
- Fish farming
- Processing and adding value to NTFPs

4. Provide logistics and incentives to the CBAGs to enhance their performance

The CBAGs clearly have logistics constraints and the few working tools that have been supplied to them by the project (Wellington boots, T-Shirts, cutlasses, etc) were not adequate to go round all the members as was emphasized during the interviews, that this has caused some members to leave the group. To facilitate the activities of the CBAGs the project must meet their basic and essential operational tools and equipment needs, especially those they require for their patrol duties in the forest reserves. The logistic the CBAGs requested include:

- Uniforms
- Raincoats
- Means of transport for patrolling
- Communication gadgets (walkie-talkies)

The CBAGs should also be given incentives to sustain their enthusiasm. Possible areas for motivating include:

- Insurance cover due to the risky nature of their work
- Credit to expand their farming activities and trade
- Food for work i.e. supply of essential food items (rice, sardines, edible oil, etc) during the lean season
- Payment of financial travelling allowance commensurate with the actual distance they travel to attend meetings and some extra money for meals.

5. Provide other incentives to the entire community members for them to support the project

The local people are aware that loss of access to fertile land in the forest reserves will be a major cost to them as a result of the project and this will aggravate the already land scarcity problem, especially for migrants and women. Discussion with them also revealed how their nostalgia about when they participated in taungya because of the staple food crops they could grow in the forest which do not do well on land outside the forest reserves. As incentive to the local people and also to illicit their support for the protection and management of the forest reserves, the project should consider the reintroduction of taungya in the communities.

The permit system for gathering NTFPs should also be made very easy to obtain. This will certainly be a good incentive for the local people, especially the poor and women.

6. Facilitate active participation of women in the CBAGs

It was clear from meetings held with the CBAGs that female representation in the groups was low. Since women play a major role in the awareness creation due to their interaction with children, friends and other community members, conscious effort should be made by the project to attract women into the CBAGs.

7. Facilitate the improvement in the opportunities for other livelihood systems

It became apparent during interviews and discussions with the youth that several of them were interested in artisanal trades which they believed would offer them better opportunities than farming and also eliminate their dependence on the forest reserves. The project should therefore explore the possibility of getting the youth in forest fringe communities access to training in some of professional trades since it the youth who are mainly engaged in the illegal chainsaw operations. Some of the trades suggested include

- Carpentry
- masonry,
- dressmaking and tailoring
- soap making
- bakery

8. Facilitate the improvement in the general socio-economic environment of the forest fringe communities.

The study revealed the poor socio-economic environment in the study communities. The poor social and economic infrastructure as well as financial and human resource base usually prevalent in forest fringe communities limits livelihood opportunities of the people which translate into their dependence on the forest reserves. The project should explore the possibility of working with the district assemblies to improve the basic social and economic infrastructure in these communities.

5.0 CONCLUSION

Since the importance of the GSBAs transcends national interest, the study has examined their implications for local communities and their global effects. The key word in the analysis, therefore, was benefits (positive and negative). Thus the study examined what are benefits at the local and how they translate into the global environmental gains.

The study has clearly shown that in terms of the project's local impacts and their contributions or detriments to the attainments of global environmental benefits, what at the local level is positive benefit may adversely affect the attainment of global environment gains and vice versa. However, the study has also shown that there are common fronts of win-win situations where project activities benefit local people while contributing to global environmental benefits.

But what has come out strongly of the study is that local people are aware that the GSBAs will give them benefits in the long run but in the short term they there are several costs that they will have to sustain, especially the loss of access to some resources in the forest reserves, particularly land for farming and community expansion and development. Consequently, they expect to be compensated. Thus the conception of the CIF particularly its use to support sustainable alternative livelihoods in the fringe communities is appropriate.

Unfortunately, one of the things that the project did not do well was the long delay in implementing the disbursement of the fund. This has raised speculation and doubt about the project fulfilling this promise. Indications were that a further delay of the fund may derail the project. In future such interventions should be planned to overlap or run in tandem with other project activities to ensure effective local participation.

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ANNEXES

Annex 1: Checklist used for the main field survey

1. Local people's understanding of the project objectives

- What do you think the project on the protection of GSBAs in your community seek to achieve?
- Do you think it is important to implement a project like this in your community? Why?

2. Local people's perceptions on the project implementation

- What are the main activities of the project? Which of the activities are on-going and which are yet to begin?
- Who are involved (or would be involved) in the project implementation and management in your community? Why and how?
- Who do you think should be involved in the project but is presently not involved? Why do you think their involvement is important? Why have they not been involved in the project implementation and management?
- Who are the outsiders (individuals and or institutions) that are collaborating with your community in the implementation of the project? What roles are they playing (or are supposed to play)? Have they performed to your satisfaction? Explain
- What do you consider as the most important component of the project and why?
- What do you think the activities do you think should be included the project? Why and how should it be executed?
- Lessons drawn from other NGOs and applied in the project design and implementation

3. What have been the local impacts (human and environmental) of the project? Benefits

- What do you consider as benefit when you participate in a project such as this and why?
- What were you made to understand as the possible benefits that individuals and the community would derive from the project
- Which do you consider as benefits and why?
- Which do you consider as not benefits and why?
- Which local institutions has benefited (or would benefit) from the project and how?
- What positive/negative physical (infrastructural, environmental, etc) changes have been occasioned as a result of the project in the community?
- How have they affected local livelihoods and occupations?

- How are people (men, women, migrants, indigenes, etc) managing or coping with these changes?
- Who in the community has benefited from the project? Why and how?
- How has the project affected local people (indigenous, migrants, men, women, young and the elderly) access to natural resources in the FR?
- What alternatives are available outside the FR
- Has the project brought any positive (and or negative) changes in the FR
- Do you consider that the positive changes would be sustainable? Why
- What are the financial expectations of the local people from the project
- What do you think the project should have done (or should do) to enhance the generation of greater benefits for the local people?

4. What are the contributions or detriments of the project's local impacts (positive or negative) to the attainment of global environmental benefits?

- What particular resources in the protected area supplement household subsistence needs (food, energy, shelter, medicinal, etc) and livelihoods? How important are these and how do you rank them and rank them
- Who in the community (or outside the settlement) use these resources most and why?
- Are there any alternatives outside the FR? Where, who has access and how does this compare with that in the FR?
- What impact do you think the acquisition of these resources from the outside the FR has on the general environment of the community
- What alternatives are available to these resources?
- How do you think these resources contribute to the well being of the local people?
- What has been the level of community involvement in decision making with regards to management of these resources prior to the project implementation
- Has the project improved your involvement in decision making in the management of FR and how?

5. The effectiveness of project objectives, strategies and environmental options in enhancing the opportunities to generate local benefits

- Capacity of the community to use the CIF;
- Organizational structure and functions of CBAGs – number of members, mode of their selection, capacity building (training received, relevance of training
- livelihoods and activities that the community/ CBAG can do for payment directly on indirectly under the project;
- Legal position of the CBAGs; proposals by the community; Security of the CBAGs
- activities and livelihoods that the community wants to embark upon.
- how can women, the poor and the minorities in the communities derive benefits from the project

- Management Plans of the GSBAs; how they are to be prepared; who will be involved; and how this will enhance local benefits from the GSBAs
- Mining issues in the GSBAs; local views on government proposal of limited mining rights in FRs; what preference – mining vrs protection of GSBAs
- Limited chainsaw operation and local sawmilling activities to create employment and generate income; local views on the issue of illegal logging operations in the GSBAs

6. Characteristics of the community that directly or indirectly affect project outcomes and impacts

- Location of the community and traditional setting – does the location has any positive/negative impact on the project; and paramountcy, kinship, land owners
- Natural resources base (access to land and other natural resources by the local people; treat land and tree tenure; local perception of communal resources – CPR and how this effects or would impact on the project)
- Economy (livelihoods) – existing and potential ones
- Population (including size, ethnicity, cohesion, etc) of the settlement and satellite communities
- Local infrastructure
- Local institutions (including CBOs, NGOs, Women’s groups, Credit Unions, etc) and their capacity for participatory natural resources management
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Annex 2: A summary of the profiles of the study communities

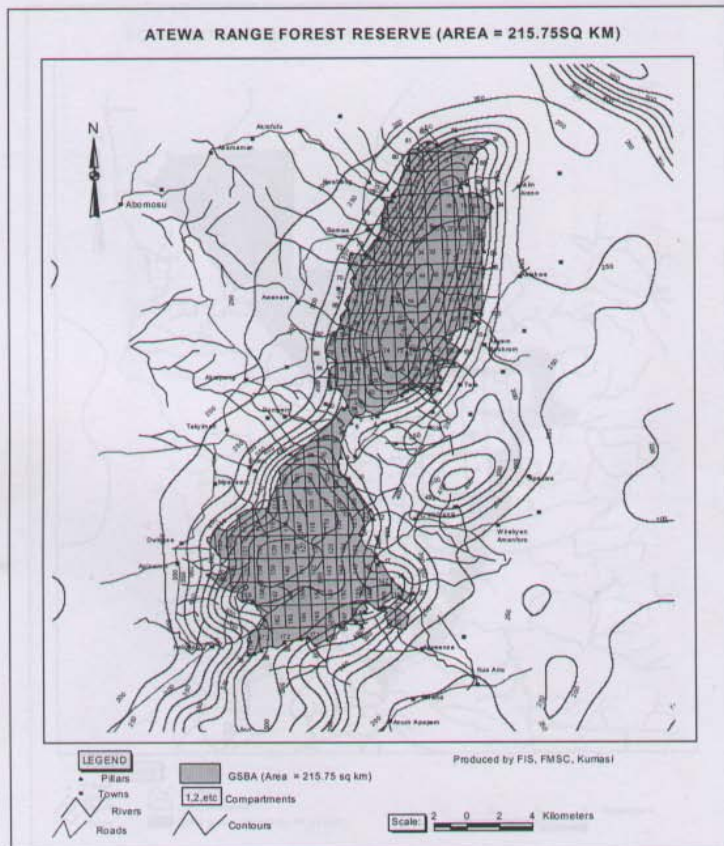
Annex 3: Itinerary of field work and key persons contacted

Table 5

Date	Place	Institution	Person Contacted (s)

Annex 4: Maps of the GSBAs

Atewa Range Forest Reserve



Boin Tano Forest Reserve

APPENDIX 1C: BOIN TANO GSBA

