
Better Management of Suhuma Forest Reserve as a Critical Biodiversity Hotspot for Green Development Initiative



By
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Executive Summary

Western Region is the largest cocoa producer in Ghana. It covers an area of 23,921 square kilometres, which is about 10 per cent of Ghana's total land surface. It is located in the south-western part of Ghana, bordered by Ivory Coast on the west and on the south by 192 km of coastline of the Atlantic Ocean.

Suhuma is one of the major Forest Reserves in the region. The reserve lies in the South-Eastern part of Sefwi Wiawso Township and shares a common boundary with Totua Forest Reserve in Asankrangwa Forest District to the South-East. The total area is 360.30 km² (36,030 ha) out of which, 6.65 km² (665 ha) is made up of twenty-four (24) admitted farms (276 ha) and one settlement, Betenase (also known as Kobo village). This leaves a net area of 35,365 km².

Cocoa cultivation is the main source of livelihood of the people living around the reserve threatening the sustainability of the forest reserve. The cocoa farmers have over the years resorted to clearing of forest lands due to scarcity of fertile land. Excessive use of the forest rent system to maintain and increase cocoa production in the past led to a considerable reduction of Ghana's forest cover (Ruf and Zadi, 1998; Ministry of Science and Environment, 2002).

It is generally recognized that a heavy reliance on cocoa farmers' capacity alone to produce cocoa sustainably while addressing environmental degradation has its limitations. This calls for the involvement of cocoa farmers, community members, institutions, policy makers and other stakeholders in the development of management plans that will reconnect local livelihoods to forest fragments in the biodiversity hotspots in the Western region cocoa belt. In summary, the reserve is faced with the following biodiversity threats:

1. Lack of revenue flow from protected and conservation areas
2. Illegal exploitation of forest resources
3. Demand for forest lands for farming
4. Existence of admitted farms/settlement within the Reserve
5. Potential conflict between Forest Services Division and communities as a result of encroachments and admitted farm extensions
6. Perception that virgin forests are best lands for cocoa cultivation
7. Scarcity of farmlands for cocoa in adjoining lands off-reserve.
8. Potential fire out break during severe drought due to human agricultural activities
9. Pollution of water resources

In Ghana, forest reserves are fully vested in the State through the Forest Ordinance of 1927, and all forest and timber resources are held in trust by the government on behalf of the stool landowners. All naturally occurring timber trees belong to government. The Forestry Commission (FC) by an Act of Parliament (Forestry Commission Act 571 of 1999) is the legally mandated manager of the two forest reserves. The area manager (Forestry Commission) of the reserve has some capacity to design and implement an area-based biodiversity management system. As a result, management plans have been developed for the two reserves. The two management plans contain some strategies for implementing a biodiversity management system. However, there are enormous challenges faced. Apart from the lack

of funding which incapacitates the area manager to implement the management plans, there is also the need for capacity enhancement to make implementation more effective and efficient.

This proposal seeks to develop a more effective and implementable management plan to implement GDI standard and certification system for land managers of the Suhuma Forest Reserve and the surrounding cocoa farms currently undergoing UTZ certification in the Western Region of Ghana. It will also help to connect GDI to ongoing UTZ Certification and FSC Certification being implemented by cocoa farmers, John Bitar Company Limited, (a logging company) in the area under the initiative and technical guidance Solidaridad and WWF. The Management Plan will provide a framework to facilitate increased biodiversity conservation and enhance sustainable management efforts of Solidaridad's Cocoa Agroforestry Project in the area. It will give the Conservancy and its members the guidance on how to best safeguard and sustainably use natural resources, particularly wildlife and timber/non-timber forest products. The impact on incomes and employment and the diversification of livelihoods will be included in the Management Plan to serve as impetus for sustainable development.

A. INTRODUCTION

The benefits of trees and forest in global climate change mitigation have long been recognized and thus trees growing in forests and on farms are the world's greatest sinks of carbon. Afforestation in Europe now offsets significant amounts of global emissions and there are many unexploited opportunities for afforestation and reforestation in developing countries like Ghana. However, tropical deforestation is one of the largest sources of greenhouse gas emissions. The Intergovernmental Panel on Climate Change estimated that in 2004, the forest sector was responsible for 17.4% of global greenhouse gas emissions (Brent Swallow et al, 2007).

Cocoa cultivation in the West African sub region has generally been dependent on clearing forest lands due to scarcity of fertile land (Ruf and Zadi, 1998). However, in recent years, the prospects of this practice have diminished drastically in most areas due to dwindled forest landscapes (Richard Asare, 2005). According to Niesten et al (2004), the remaining forest cover in West Africa constitute only one-fifth of its original extent. In Ghana for instance, an excessive use of the forest rent system to maintain and increase cocoa production in the past led to a considerable reduction of the country's forest cover (Ruf and Zadi, 1998; Ministry of Science and Environment, 2002). Cocoa is a major economic crop that contributes significantly to foreign exchange earnings in Ghana (Crook, 1990; ISSER 2003). As a result, government policies in the past invariably always favored increase in cocoa production through farm expansion at the expense of conserving the forested areas.

Furthermore, colonial policies that imposed taxes on men, facilitated movement of migrants from the north into high forest zones to seek wage labour to meet this obligation (Konings, 1986:cf. Amanor, 1996). Farmers in Eastern Ghana moved to the Western part when cocoa farms in the east became unproductive due to pest and diseases problems, depleted soils and loss of appropriate vegetative cover (Ministry of finance, 1999). The influx of farmers towards Western Ghana from the old cocoa growing frontiers in the passage of time have constantly increased as farmers move from Ashanti, Volta, Brong Ahafo and Central regions to clear forest for cocoa farms establishment (Richard Asare, 2005). Adoption of a new variety that tolerated no or low shade system also influenced farmers to eliminate trees from their farms to favor the hybrid yield performance (Padi and Owusu, 1998).

Stakeholders believe that a heavy reliance on cocoa farmers' capacity alone to produce cocoa sustainably while addressing environmental degradation has its limitations. This calls for the involvement of stakeholders such as cocoa farmers, community members, Forestry Commission, Wildlife Division, Forestry Services Division, traditional institutions and policy makers in developing management plans that can reconnect local livelihoods to forest fragments in the biodiversity hotspots in the Western region cocoa belt in the enclaves of Suhuma forest reserve.

Green Development Initiative (GDI) is promoting the establishment of biodiversity certification scheme for land management based on Conservation Biological Diversity guidance. This presents a perfect opportunity to effectively manage the environment by building capacities for environmental sustainability, integrating best practices in ecosystem improvement and a business model for the environmental market.

This proposal seeks to develop a more effective and implementable management plan to implement GDI standard and certification system for land managers of Suhuma Forest Reserve and surrounding cocoa farms currently undergoing UTZ certification in the Western Region of Ghana. It will also help to connect GDI to on-going UTZ Certification and FSC Certification being implemented by cocoa farmers, John Bitar Company Limited, (a logging company) in the area under the initiative and technical guidance Solidaridad and WWF.

The Management Plan will provide a framework to facilitate increased biodiversity conservation and enhance sustainable management efforts of Solidaridad's Cocoa Agroforestry Project in the area. It will give the Conservancy and its members the guidance on how to best safeguard and sustainably use natural resources, particularly wildlife and timber/non-timber forest products. The impact on incomes and employment and the diversification of livelihoods will be included in the Management Plan to serve as impetus for sustainable development.

B. AREA CHARACTERISTICS

Western Region is the largest cocoa producer in Ghana. It covers an area of 23,921 square kilometers, which is about 10 per cent of Ghana's total land surface. It is located in the south-western part of Ghana, bordered by Ivory Coast on the west and on the south by 192 km of coastline of the Atlantic Ocean. Two of the major forest reserves in the region are Suhuma.

Suhuma falls between the parallels of latitudes 5° 56' and 6° 11' N and longitudes 2° 21' and 2° 36' W. The Reserve lies in the South-Eastern part of Sefwi Wiawso Township and shares a common boundary with Totua Forest Reserve in Asankrangwa Forest District to the South-East. The total area is 360.30 km² (36,030 ha) out of which, 6.65 km² (665 ha) is made up of twenty-four (24) admitted farms (276 ha) and one settlement, Betenase (also known as Kobo village). This leaves a net area of 35,365 km². It is a class L - Area in Ghana (West Africa) with the region font code of Africa/Middle East. It is located at an elevation of 115 meters above sea level. Its UTM position is WM55 and its Joint Operation Graphics reference is NB30-11. The standard time zone for Suhuma Forest Reserve is UTC/GMT+0 ([http://www.getamap.net/maps/ghana/ghana_\(general\)/_suhumaforestreserve/](http://www.getamap.net/maps/ghana/ghana_(general)/_suhumaforestreserve/)).

C. AREA MANAGER

In Ghana, Forest reserves are fully vested in the State through the Forest Ordinance of 1927, and all forest and timber resources are held in trust by the government on behalf of the stool landowners. All naturally occurring timber trees belong to government. The Forestry Commission (FC) by an Act of Parliament (Forestry Commission Act 571 of 1999) is the legally mandated manager of the two forest reserves. It should be noted that other stakeholders also play important roles in forest management at district and community levels.

Suhuma has existing management plan which outlines some strategies for implementing a biodiversity management system. However, it needs critical review to make its implementation more efficient and effective. The lack of funding, lack of ownership and low participation of community members and other stakeholders render implementation of the plans quite redundant. Furthermore, there is the need for institutional capacity development and capacity enhancement to create linkages to ensure biodiversity conservation in the two forests.

D. RAPID ASSESSMENT AND ANALYSIS

Suhumah Forest Reserve has a typical three storey structure with the emergent trees attaining an average height of 40 metres. Most of the trees are deciduous. The vegetation is composed of a mixture of high forest and big patches of open forest with undergrowth of shrubs and climbers. A poor forest of poles with dense undergrowth of lianas and shrubs occur on the shallow soils of the rocky side and in low-lying areas which flank the streams, and which occasionally become swampy during the rains. The valley bottoms are permanently swampy and *Ancistrophyllum-Calamus-Raphia* communities are present. There is currently no faunal inventory data on the Reserve. However, nine small to large mammal species representing 6 families, 7 genera, and 9 species have been confirmed in Suhuma Forest Reserve. Common species were brush-tailed porcupines and giant rats.

There is intense hunting pressure in the area. Three types of activity connected to hunting have been encountered: spent cartridges, poacher's paths and wire snares. There was no record of carbide spots, gunshots or any direct observations of hunters. However, hunting with guns was the most common form of hunting used by poachers.

Threats to the Suhuma Forest Reserve and Biodiversity Conservation

Suhuma has the following biodiversity threats:

- Scarcity of farmlands for cocoa in adjoining lands off-reserve
- Existence of admitted farms/settlement within the Reserve
- Potential conflict between FSD and communities due to encroachments and admitted farm extensions.
- Perception that virgin forests are best lands for cocoa cultivation
- Pollution of water resources
- Non commitment on the part of some stakeholders
- Lack of revenue flow from protected and conservation areas
- Potential fire out break during severe drought

- Illegal exploitation of forest resources
- Demand for forest lands for farming

The Problem

Managing the world's forested land environments is perhaps one of the most challenging and pressing development problems of today. Forested lands designated as critical biodiversity hotspots are now fragile ecosystems making fringed communities extremely vulnerable to environmental and global change. The problems are severe and of large extent in Ghana's critical protected lands which support millions of rural poor across the country cocoa belt. For instance, the natural resource base of forest reserves in the western region of Ghana which the rural dwellers depend on for cocoa and other livelihoods is rapidly degrading, with as much as 70% of all land already degraded to some extent. Without urgent policy action there is a high risk of further rapid environmental degradation and spiraling poverty. Unfortunately, development interventions in the forested lands have not had a high success rate. However, new knowledge, paradigms shifts and principles for sustainable land management systems are emerging based on the hard lessons from past experiences.

Considering the trend and rapid rate of degradation caused by cocoa farms expansion in the reserve, reforestation, recycling of land to improve soil fertility and create shade for soil moisture conservation and carbon sequestration. The Green Development Initiative therefore is and appropriate response for reversing the excessive deforestation created and undertakes more sustainable options.

In this proposal, Solidaridad seeks to facilitate the development of a Green Development Initiative Certification that will lead to the creation of cocoa biological corridors to link fragmented biodiversity hotspots in the cocoa growing frontiers to enhanced sustainable cocoa livelihoods and biodiversity conservation in and around the two reserves. It would also enhance cocoa farmers' capacity to adopt and create sustainable systems in pursuance of biodiversity hotspots conservation and improved cocoa livelihoods. By improving human capacity to tackle forested land degradation in the Western region of Ghana, there will be a direct contribution to the global objectives of the UNCCD, and other global environmental conventions that recognize the importance of addressing land degradation, including the Convention on Biological Diversity (CBD), and the United Nations Convention on Climate Change (UNFCCC).

It is important to note that at independence, Ghana had a total 8.2 million hectares of tropical rainforest. In less than fifty years, Ghana's total forests cover to 1.6 million hectares. Rampant deforestation and poor policy by the Ghanaian government to effectively manage the country's wildlife have significantly reduced the country's forest cover leading to fears that bad times lie ahead. The causal factors include bush burning, logging, hunting, unsustainable cocoa farming.

Suhuma forest reserve used to cover a wider area than today. Unfortunately, inability to adhere to previous management plans, prevailing economic pressures and failure to include the immediate communities in the management of these forests have been the bane of these project sites. The effects of deforestation on the local communities have been immense. From dwindling farm yields, reduced access to drinking water and massive exposure to the vagaries of the weather have been some of the effects on the local people.

E. BioSWOT Analysis

Currently, Suhuma has been divided into two main management zones; Protection and the Production zones. Management zones have been maintained in accordance with their original boundaries. There has been regular disbursement of revenue to all stakeholders as indicated by annual control reports.

There is a demarcation of 283 compartments in Suhuma forest reserve covering an area of 34,518 ha which is being managed for sustainable timber production under a forty-year felling cycle. The protection area has a Hill sanctuary covering an area of 1,123 ha. The protection zone also covers an area of 24,521 ha with several protection functions.

These include:

- **Globally Significant Biodiversity Areas**

These are areas selected for biodiversity conservation and are of interest to the international community due to its high genetic index of 46. In this area the quality of the forest in terms of its condition (forest canopy cover, canopy height and species diversity) is to be conserved with stringent protection from logging and the commercial collection of NTFPs.

- **Hill Sanctuaries**

Forty (40) compartments of net area 4,526ha have been identified for this purpose. This portion of the reserve covers areas within the reserve where the slope is greater than 30%.

- **Convalescence Zone**

This zone is made up of compartments which is due to either the effects of past excessive logging or incidence of wild fire are now at a stage where it cannot be logged in the present management cycle. A guide of 15m²/ha basal area or less is indicative in this case.

Production Zone

The zoning of the reserve seeks to address these objectives:

- To ensure full protection of areas of high conservation value including Hill sanctuary, globally significant biodiversity area (GSBA), Province area, and wetlands.
- To ensure protection of both flora and fauna in order to maintain biodiversity for the wider national and international interest.
- To maintain the watershed services to the Draw river and its tributaries
- To generate revenue from the GSBA through promotion of eco-tourism
- To institute programmes and actions that guarantee adequate flow of benefits to the local communities without compromising the integrity of the forest
- To sustain the production of timber and non-timber products from the forest as a source of revenue and livelihood for the resource owners and fund for management whilst maintaining environmental quality and social cohesion.
- To ensure steady flow of timber revenue to stakeholders

- To ensure that, vested rights holders in the land owning communities have access to forest goods without compromising the integrity of the forest.

SWOT Analysis of Suhuma Forest Reserve

Production Objectives

Strength	Weakness
<ul style="list-style-type: none"> • Availability of forest resource for long term economic harvesting • Existence of qualified staff for implementation of the plan • Existence of laws, regulations and Manual of operations (MOPs) • Fairly good access roads to the forest 	<ul style="list-style-type: none"> • Low services fees and stumpage charges • Lack of modern working tools and equipment • Poorly resourced staff • Inadequate field staff • Unmotivated staff • Inadequate and untimely release of funds for operational activities
Opportunity	Threats
<ul style="list-style-type: none"> • Potential for forest-based industries and downstream processing • Support from government agencies • Support from donor agencies and NGOs for sustainable forest management • Potential for carbon credits • VPA legality assurance system • Potential for collaboration with community-based organizations to control encroachments on the Reserve 	<ul style="list-style-type: none"> • Existence of admitted farms/settlement within the Reserve • Illegal logging and chain sawing • Generally poor cooperation from Law enforcement agencies • Incidence of wildfires • Over-exploitation of primary species

Protection Objectives

Strength	Weakness
<ul style="list-style-type: none"> • Conservation of sizeable (1001 ha) forest resources to meet the current and future needs of society • Development of management plan • Availability of MOPs for operational activities • Existence of forest policy and laws 	<ul style="list-style-type: none"> • Low services fees and stumpage charges • Lack of modern working tools and equipment • Poorly resourced staff • Inadequate field staff • Unmotivated staff • Inadequate and untimely release of funds for operational activities • Exclusion of fringe communities in management decisions
Opportunity	Threats
<ul style="list-style-type: none"> • Potential for forest-based industries • Possible donor support • Collaboration with local government institutions and traditional authorities • Potential for development of indigenous knowledge for biodiversity conservation • Existence of vigilant civil society groups • Potential for carbon credits and payment for environmental services. 	<ul style="list-style-type: none"> • Illegal chain saw operations • Non commitment on the part of some stakeholders • Lack of revenue flow from protected and conservation areas • Inadequate support from police and judiciary in law enforcement. • Pressure on reserve for NTFPs, industrial materials and farming

Socio-economic objectives

Strength	Weakness
<ul style="list-style-type: none"> • Existence and recognition of admitted and communal rights • Avenue for collaboration through the various community-based organizations and forest fringe communities • Increasing awareness of the fringe communities on their rights and responsibilities • Availability of cultural sites for development of ecotourism in future • Existence of Social Responsibility Agreements 	<ul style="list-style-type: none"> • Poor attention to NTFP management • Lack of well documented system for NTFPs management • Non-engagement of forest fringe communities in decision making • Undefined roles for other stakeholders in the management and the protection of the Reserve • Low educational background for most forest fringe communities
Opportunity	Threats
<ul style="list-style-type: none"> • Community members' indigenous knowledge on NTFP management • Development of small-scale forest-based industries. eg; snail production, Bee keeping and basketry • Potential for NTFP development • Potential for carbon credits and payment for environmental services 	<ul style="list-style-type: none"> • Over exploitation of NTFPs including game animals • Potential fire out break during severe drought • Illegal exploitation of forest resources • Demand for forest lands for farming

Potential Project Partners

A number of potential project partners are available in these areas and they are defined below:

- i. **WWF-Ghana:** Solidaridad is collaborating with WWF in the implementation of Cocoa Agroforestry Project in the Suhuma area through linkage between UTZ Certification and FSC certification. It has knowledge for restoring and maintaining biodiversity and engaging with local communities to ensure long term sustainable development. Already, this process has helped about thousand cocoa farmers in the area to attain UTZ Certified certification. It has also helped John Bitar Company limited to attain FSC Controlled Wood for its forest reserves including Suhuma Forest Reserve and two (2) Chain of Custody certificates.
- ii. **District Assemblies (Sefwi Wiawso and Sefwi Akontombra):** These are local government institutions that have legislative backings for the protection of the environment. They are also the representatives of the people and their assistance will be needed in the area of community entry and access to these fringe communities
- iii. **SRA Committees:** These are committees that ensure logging companies comply with the signed agreement and are involved in the collection and distribution of benefits from timber firms. These will assist in the management of benefits that will accrue from the management of the reserves.
- iv. **John Bitar Company:** This is a timber logging firm that is greatly involved in tree certification and protection of the forests. They also have a concession for logging in the Suhuma reserve. It is partnering with Solidaridad and WWF in the implementation of the Cocoa-Agroforestry Project and a beneficiary of the FSC Certification process.

- v. **Forestry Commission/Forestry Services Division:** The Forestry Commission is the legal manager of all forests in Ghana and have in depth knowledge of all management plans for all forests in Ghana and most especially, the project areas
- vi. **Ghana Wildlife Society:** It is Ghana's premier local conservation NGO for technical expertise.
- vii. **Individual Land Owners:** These are indigenous people that own lands/farms or operate agricultural activities off and within the reserves.
- viii. **Ministry of Food and Agriculture (MOFA):** Government agency in charge of Food Security
- ix. **Ghana Cocoa Board:** Government Institution mandated by government to ensure continuous growth of the cocoa sector.
- x. **Wildlife Division:** A subsidiary of the Forestry Commission for the protection and habitat/resource conservation.

E. Work Plan for Planning and Registration

Step two of this proposed management area seeks to involve cocoa farmers, community members, Forestry Commission, Wildlife Division, Forest Services Division, relevant traditional and local government institutions and to collaborate and play active roles in the forest management. Implementation will focus on the following:

Institutional Capacity enhancement and stakeholder engagement

Community sensitization and stakeholder engagements will be conducted. This will create a platform where institutional development and capacity enhancement among stakeholders will be ensured. This will be preceded by desktop stakeholder analysis to identify all relevant stakeholders. By so doing, a community forest management committee will be formed to foster partner cohesion and motivation in mainstreaming GDI Certification scheme for sustainable forest production.

In this action, community mapping will be carried out in order to properly manage catchment areas and enhance performance indicators. It is anticipated that once this is done, it will have positive effect on production practices and improve the economy of their communities.

The capacities of local institutions, farmers and community members in general will be enhanced through the establishment and strengthening of farmer associations/groups implementing voluntary standards. Community Resource Management Area (CREMA) will also be created in project sub-areas and will be managed by Community Forest management Committees. CREMA is an innovative mechanism for natural resource governance and landscape-level planning tool that authorizes communities to manage their natural resources for economic and livelihood benefits. This will serve as a platform for cocoa producers to discuss issues of common interest, develop action plans and engage with policy makers and people in authority at the community and district level to demand change and payment for environmental services. It is hoped that tree planting jobs will be created for community members as part of logging companies' sustainability programmes.

The stakeholder engagement process will include

1. Organize awareness creation and sensitization campaigns in the target communities and stakeholders on the need to create form Community Resource Management Areas and establishment of Community Forest Management Committees (CFC)
2. Conduct Participatory Learning and Action (PLA) to determine the form of the management structure at the grassroots level and roles of local institutions
3. Facilitate the development of modalities for selecting representatives on CFCs

4. Jointly formulate working modalities and programmes with CFC members and communities
5. Facilitate the development and implementation of Community Action Plans for the management of biodiversity
6. Provide technical backstopping to the CFCs and operations of the CREMAs

Advocacy and lobbying

Advocacy and lobbying activities will be used as a process for the concerns of community members and producers to reach national policy and decision makers such as the Forestry Commission, Timber Logging Companies, Traditional Councils, District Assemblies and other relevant government institutions. This will ensure that the communities are included in such decisions in a manner that address the problems they face in their enterprise.

Community mapping and modeling

- Participatory land use mapping for biodiversity management would be conducted using Participatory 3 D Modeling (P3DM) method.
- Re-demarcate and survey all admitted farms in the reserve, protected area in the reserve and production areas in the reserve.

Adapting Management Plan with GDI standard

- Establish a planning team to lead the process and preparing all the relevant information and identifying the key stakeholders.
- Hold public meeting with representatives from a broad range of stakeholders using P3DM as reference to:
 - a. Agree on the overall "**Vision**" for the GDI Biodiversity Management Plan, and the principles by which it will be achieved.
 - b. Define and analyze the key problems or "issues" that will be addressed by the plan and the stakeholders involved in each of these key issues.
 - c. Agree on management priorities and objectives for defined zones and land use type (forest, cocoa farm, settlements).
- Conduct targeted consultation with a range of key stakeholder groups around critical issues.
- Modify management plans and internal control systems of zones currently undergoing FSC and UTZ certification to incorporate GDI principles for additional certification.
- Train stakeholder groups on the principles of GDI certification.

Monitoring and Evaluation

Baseline Assessment

A detailed baseline assessment and a monitoring system will be put in place to ensure implementation alignment with planned activities. The Baseline study will document demographics, natural resource base, and health conditions of the communities that the program will target. Data collected for the

baseline study will support the indicators and will serve as a reference for data collection during mid-term and an independent final impact evaluation during the last quarter of the project's duration.

The baseline levels of conditions in the communities will ensure accurate measurement of the impact of the proposed interventions through the life of the project. During this baseline survey, questionnaires will be developed and tested for collecting biodiversity, household social and economic baseline data. This same survey will also be used during the impact survey at the end of the project. Household baseline information will be collected from each participant when they are recruited into the program. Solidaridad may supplement the data collected during the baseline survey through Participatory Learning and Action (PLA) methods in selected communities to refine and/or validate some of the baseline survey data. There will be periodic data collection on impact and monitoring indicators by project staff and consultants which will allow continuous evaluation of the project's progress for the required annual, mid-term and final reports. The baseline data will be used for evaluation and impact assessment.

Project Monitoring

Monitoring provides project management and staff with the tools to determine if project activities are being implemented as planned, measure if performance targets are being met and the interventions are responding to the needs of GDI. Monitoring also serves to provide information to guide decisions to implement corrective action to improve the performance of the project, discover trends, keep activities on schedule, allocate staff and resources properly and meet reporting and accountability requirements of the donor. In this project, monitoring activities will be coordinated by the Monitoring and Evaluation Manager of Solidaridad West Africa. The M&E Manager will be responsible for the development of reporting forms, assignment of monitoring responsibilities to staff, set-up of the project's management information and data collection system and track progress based on the defined impact and annual monitoring indicators. The project records will provide the necessary data to measure progress of project interventions on a monthly, quarterly and annual basis. Actual progress will then be compared with targets established in the Indicator Performance Tracking table. All project field staff starting from the field and technical staff and the Program Manager, as well as staff of collaborating partners will be involved in the process of project monitoring.

Solidaridad's monitoring system will integrate data collection, analysis, reporting and use to enhance organizational learning and confirm whether the project-induced changes are resulting in anticipated benefits, and whether there are unanticipated changes resulting in adverse effects that require prompt mitigation. To ensure the achievement of project objectives, the Project Team may revise work plans that are derived from the annual performance tracking table every quarter based on monitoring information in consultation with donor and other relevant stakeholders. Through quarterly and annual program and financial reports generated by the project and other reports produced by Solidaridad's visiting technical advisors, the monitoring system will establish that program inputs, activities and outputs have occurred and on schedule.

Work Plan (12 months)

No.	Project Component	1	2	3	4	5	6	7	8	9	10	11	12
1.	Development of project team	→											
2.	Institutional capacity enhancement and stakeholder engagement (Consultations and Sensitization Workshops)	→	→										
3.	Community Mapping & Modeling: 1. Participatory Land use planning using P3DM (2 Models) 2. Re-demarcation	→	→	→	→	→	→						
4.	Baseline Assessment: Participatory Development of Biodiversity/Land Management Plans and Internal Control System		→	→									
5.	Development of Biodiversity/Land Management Plans					→	→						
6.	Implementation of Management Plan (Registration and training of land managers) 1. Training on GDI Mgt. Plans for GDI, 2. Linkage with UTZ & FSC 3. Establishment of CFCs and CREMAS							→	→	→	→	→	→
7.	M&E, backstopping	→	→	→	→	→	→	→	→	→	→	→	→
8.	Reporting			→			→			→			→

Biodiversity Outcomes

Biodiversity-Positive Outcomes

- Willingness of the government to submit to instruments, conventions, and international protocols to support sustainable forest management.
- Existence of UTZ and FSC certification
- Donor funding to enhance effective management.
- Avenue for collaboration between Forest Services Division (FSD) and governmental organization as well as TUC holders, land owners and interested NGOs.
- Continuous and rising demand for timber locally and internationally.
- Existence of mechanism for arrest and prosecution for forest offence
- Willingness of some communities to collaborate in the management and protection of the reserve.
- Conservation of sizeable (1001 ha) forest resources to meet the current and future needs of society
- Development of management plan
- Fringe communities willingness to collaborate in forest governance
- Development of an inventory for fauna and flora
- Re-forestation of the reserves

Conservation outcome

The conservation outcomes that will emanate from the project for this area will be enormous.

- Water resources would be well protected from the use of chemicals on farms
- Fringe communities would be made to appreciate the value of virgin forests in terms of the benefits to the farmer, country and community
- Forest and biodiversity would be protected
- Potential wild fires created as a result of human settlements within the reserves will be minimized through sensitization and the adoption of stringent wildlife management measures.
- Potential conflicts between forest managers and fringe communities will be averted by the awareness that will be created to the extent that the work being done by the land managers will be beneficial to all stakeholders
- The adoption of UTZ code of conducts by cocoa farmers would go a long way to conserve biodiversity.
- Degraded forest areas restored

Sustainable Use

- Desirable forest tree species regenerated.
- Hunting activities regulated through awareness creation and licensing
- NTFPs collection regulated

- Land use (protected forests, productive forests, regenerative lands, farms, settlement) re-demarcated using participatory approach and managed using GDI principles.

Social equity

- Community Forest Committee (CFC) established that would include representatives of all stakeholders and largely by community members.
- Community would be facilitated to map their and share their concerns and rights using Participatory 3 D Models (P3DM).
- Internal Control System (ICS) for cocoa farmer groups established
- Women are given platform to hold positions within the CFC and ICS
- Judicious use of revenue from forest for development projects.
- Payment of appropriate compensation to land owners ensured.
- Institutional structures, ICS and CFC would be strengthened to share benefits equitably and judiciously.

Development outcome

This project aims as meeting the general government of Ghana's desire to provide a critical intervention for the resuscitation of forest resources in order to prevent Ghana becoming a net importer of wood.

It is also aimed at achieving the following in relation to Ghana's Medium Term Development Goals:

Environmental sustainability

- Enhanced biodiversity and conservation of protected areas
- Eco-tourism promoted
- Improved livelihoods of the fringe communities through the creation of alternative income sources, provision of farmer business skills and good agricultural practices
- Intensification of cocoa farming for increased productivity and reduced tendency to expand to the reserves

Budget

No.	Project Component	Unit Cost €	Qty	Total €
1	<i>Development of project team</i>			
	Consultants (Biodiversity Status)	5,000	1	5,000
	Project Coordination costs	1000	12	12,000
	District Level Team	9,000	1	9,000
2	<i>Institutional Capacity enhancement and stakeholder engagement</i>			
	Stakeholder Sensitization Workshop	3,500	1	3,500
	Sensitization and engagement within all 24 Admitted and Fringe communities	300	24	7200
3	<i>Community Mapping and Modeling</i>			
	Participatory Land use planning using P3DM	8,000	1	8,000
	Re-demarcation	5,000	1	5,000
4	<i>Baseline assessment</i>	6,000	1	6,000
5	<i>Participatory Development of Biodiversity/Land Management Plans and Internal Control System</i>	15,000	1	15,000
6	<i>Implementation of Management Plan</i>			
	Registration and orientation of land manager (Admitted farm owners, cocoa farmer groups, FSD, logging company)	3,000	1	3,000
	GDI training of land managers, CFCs and CREMAs	12,000	1	12,000
	GDI certification	3000	1	3000
	M & E and backstopping – borne by Solidaridad	7,000	1	7,000
	Reporting	3,000	1	3,000
	Sub total			98,700
7	Overheads (7%) – borne by Solidaridad	6909	1	6909
8	OVERALL TOTAL			105,609
	Total: Solidaridad			6909
	Total: GDI			98,700

Photos of the Suhuma Forest Reserve in Ghana



Figure 1: Suhuma Forest Reserve



Figure 2: An Admitted community in the Suhuma Forest Reserve



Figure 1: Landscape of Suhuma Forest Reserve

Picture by Apau Blay WWF/Solidaridad
Agroforestry Project at Suhuma



Figure 2: An Ape in the Suhuma Forest Reserve

Picture by WWF Ghana



Figure 3: Leguminosae-pap *Crotalaria Cephalotis*

Picture by Ekpe - NSBP