

Readiness Preparation Proposal
(RPP)
Guyana

Forest Carbon Partnership Facility
(FCPF)

September 7, 2009

Table of Content

Readiness Preparation Proposal General Information.....	4
Component 1: Land use, forest policy and governance quick assessment.....	9
Component 2: Management of Readiness.....	21
2b. Prepare a REDD Consultation and Outreach Plan	26
2c. Previous Initial Consultations Conducted	31
Component 3- Design the REDD strategy	34
Component 4: REDD Implementation Framework	40
Component 5- Assess the Social and Environmental Impacts, and Potential Additional Benefits, Of Candidate REDD Strategy Activities.....	48
Component 6: Assess investment and capacity building requirements	56
Component 7: Develop a Reference Scenario.....	61
Component 8: Design the Monitoring, Reporting, and Verification System for REDD.....	67
Component 9: Design a System of Management, Implementation, and Evaluation of Readiness Preparation Activities	80

Annex

Annex 1- Quick Assessment Report (in separate file)

Annex 2- National Forest Policy (in separate file)

Annex 3-Consultation Summary Report (in separate file)

Annex 4- Land Use Plan (Draft) (Regional) (in separate file)

Annex 5- Terms of Reference (all components)

Annex 6- Budget (in separate file)

Annex 7- OP 4.00

Readiness Preparation Proposal General Information

1. General Information:

a) Name of submitting institution and person:

Title: Mr. James Singh, Commissioner of Forests

Contact information

Address: Guyana Forestry Commission (GFC)

Lot 1 Water Street, Kingston, Georgetown, Guyana

Telephone: (+592) 225-3898 or 226-7271 or 226-7274

Fax: Fax: (+592) 226-8956

Email: commissioner@forestry.gov.gy

Website, if any: www.forestry.gov.gy

Affiliation and contact information of Government focal point for the FCPF:

The Guyana Forestry Commission is the national focal point of the FCPF. (Contact information listed above)

b) Authors of RPP, contributors to the RPP, and others consulted, and their organizations:

This Proposal was prepared by the Guyana Forestry Commission (GFC) with assistance from the Office of Climate Change of the Office of the President, the Guyana Lands & Surveys Commission (GL&SC), the Guyana Geology and Mines Commission (GGMC), with the collaboration of the members of the National Climate Committee.

c) Technical assistance received

The GFC contracted the services of Dr. Denis Alder, a forest biometrician and information system specialist for guidance in the development of some areas of the RPP.

Informed by studies undertaken with support from ITTO, WWF, CI, and other partners and initial consultation with some communities.

2. Current country situation: brief stand-alone summary.

Guyana's pristine forest covers over 85% of the country, contains over 5GtCO₂ in above ground biomass, and is estimated at 18.5M hectares by WRI and UN FAO.

The relatively low deforestation rate in Guyana is 0.1% to 0.3% (UN FAO FRA 2005, Colchester 1999). Using an

average above-ground stock of 340 t CO₂e per hectare (the average of the estimates of Hans ter Steege, 2001, and Brown (1997), and an additional 20% of biomass below ground, the deforestation emissions since 2000 averaged 22.6 million t CO₂e per year. It is more difficult to estimate the historical emissions from degradation.

Guyana has had relatively low historical rates of deforestation. However, Guyana's national circumstances clearly indicate that if incentives and governance are not directed to controlling deforestation and degradation, both of these rates and their associated emissions are expected to significantly increase.

Guyana is a good example of the need to include REDD¹ activities in a country with historically low rates and emissions because of several reasons:

- 1) Much forest suitable for logging and conversion to agriculture remains;
- 2) There is a growing national and regional demand for agricultural products and tropical timber;
- 3) Access to Guyana's forests will be significantly increased during this decade. Most notably, a major international highway from Brazil through southern Guyana to the north coast will be built;
- 4) Brazil has a very large and dynamic human population that could rapidly move into Guyana for both logging and agricultural activities;
- 5) Implementation of REDD and other conservation measures in Brazil leads to a high potential for international leakage of deforestation and degradation into Guyana, via the highway.

Deforestation and degradation occur mainly in the State Forest Estate where logging, mining and agricultural activity co-exist, as well as in the forests on Amerindian and other private lands. Deforestation is driven by four principal factors, namely: 1) the targeted harvesting of a limited number of prime commercial species, with little emphasis being placed by the loggers on efficiencies, 2) the clearing of forested areas for mining, 3) the conversion of forested areas to allow for agricultural activities, 4) infrastructure development such as roads. A limited amount of clearing is also done for the construction of housing and illegal logging activities.

While most forest countries have high rates of deforestation with their forest areas on the decline, Guyana has over 80% of its land area covered in forest, approximately 16 million hectares. As a developing country, the GoG can choose to utilize the forests and to extract its resources to obtain revenue which is needed for growth and development as a nation

The Government of Guyana believes that it can protect and maintain the forests in an effort to reduce global carbon emissions and at the same time attract resources for the country to grow and develop. The implementation of a REDD strategy is viewed as an avenue through which this can be achieved.

The resources garnered through this initiative would in turn be used towards the reduction of poverty, promotion of sustainable development and achievement of the Millennium Development Goals (MDGs)

¹ For purposes of Guyana's RPP, REDD should be construed to mean activities consistent with para 1 (b) (iii) of the Bali Action Plan. Further, Conservation in this paragraph should be construed to include avoided deforestation in the context of Guyana's RPP.

3. Definition of objectives, approach, and responsibilities for the RPP process:

The general objectives of the Proposal are to identify and present studies, consultation and other preparation activities that will be conducted in the preparation phase and that are centered on the 9 components of the Preparation Proposal.

The GFC has already commenced a series of Sensitization Meetings targeting communities in all of the 10 administrative regions of Guyana (see Appendix 4). The main objective of these meetings was to inform stakeholders about the upcoming REDD initiative which the GFC would be implementing and the potential implications, risks and opportunities and to receive their initial feedback. Along with this, initial stakeholder comments and concerns as it related to the implementation of this initiative have been addressed. These sensitization meetings are considered as the prelude to the REDD Consultations which are scheduled to begin shortly (See Appendix 4).

It will allow for a Strategic Environmental and Social Assessment (SESA) of the potential impacts of the implementation of the RPP on the local environment and livelihoods. These impacts will be assessed and quantified and from this, appropriate mitigation measures to address these impacts will be developed. The RPP will also for the design of a monitoring, reporting and verification system and the development of historic and future reference scenarios.

The Proposal will involve all stakeholders in the designing of the REDD Strategy. This will be conducted in a participatory manner with emphasis on consultations with local communities.

The readiness preparation process would work through the following four elements, with an aim of reducing poverty and promoting the development of Guyana: a) cross-ministerial coordination and institutional capabilities, b) community and Amerindian development and c) technical programs. Overall, while the REDD Strategy will be centred on reducing rates of deforestation and degradation, and on reducing poverty and improve livelihoods through an appropriate, well designed benefits sharing system.

a) Cross-ministerial coordination

Success of REDD will require a high level of political commitment and involvement of multiple sectors and Government institutions and the preparation phase will emphasize these two elements.

With the strengthening of the Land-Use Committee there would be better, more harmonized legislation, national land-use policy, and national physical plan related to improved land-use planning. Additionally, the Guyana Geology and Mines Commission (GGMC) is recommended to upgrade its monitoring and enforcement systems. In its Sensitization Meetings, the GFC has also included the Ministry of Amerindian Affairs in these meetings so as to sensitize Ministry officials who can later engage in wider stakeholder dialogue, to present this information to other communities which the GFC has not met with.

b) Community and Amerindian Involvement

Engaging Amerindian communities to use their titled lands in a sustainable way is critical to reducing emissions from degradation and deforestation. CFO's and Amerindian communities (Orealla, Kwebana and Batavia) have benefited

from Reduced Impact Logging and Sustainable Forest Management Training, and the GFC requires funding and assistance to expand the programs beyond the 23 community forestry organizations trained during the past 3 years.

Through the sensitization meetings, alternative economic and employment opportunities were presented to the community members that agree to protect forest resources and reduce unsustainable activities. Alternatives such as ecotourism, production of higher value forest products, aquaculture, botanical research, and non-timber forest products including handicraft production, were presented for the communities to evaluate. The community members were informed that these activities would be implemented once they decided upon a feasible option and that it will be further discussed during the official REDD Consultations.

Amerindian communities will be involved in all stages of consultations. Their input is very important to the proper design of a REDD Strategy as well as the benefits sharing system. Additionally, they will be instrumental in the selection of Alternative Economic Opportunities (AEO) into which the communities will engage. Through the sensitization meetings, the GFC was able to conduct some initial consultations with several of these communities, such as Orealla/Siparuta, Santa Mission, St. Ignatius, Moca Moca, Nappi and Kwebana. The community members had expressed their interest in pursuing REDD activities (See Component 2). The Guyana Forestry Commission is continuing to work with the Community Forest Organizations (CFO) and Amerindian communities to improve understanding of the GFC's guidelines, especially with regards to SFM practices.

The GFC will continue to provide training and support to additional Amerindian Communities to enable them to manage in a sustainable manner, the forest resources that are on their titled Amerindian Lands. This will be done through a collaborative effort of the GFC and the Forestry Training Centre Incorporated (FTCI), as well as through other means. A part of the Readiness budget for providing training and extension services to Amerindian Communities.

Additionally, continuing the titling process is also an important aspect of the REDD Strategy.

Amerindian communities, by law, have the right to the management of titled indigenous lands and their potential use in REDD activities. The participation in the REDD programme will not be mandatory but rather will be optional. Communities will therefore choose whether they would like to get involved following careful decision making after having been fully informed by the GoG. This will be done after appropriate consultations with communities.

Communities that are not ready to participate in activities can do so at a later stage. Communities will have an opportunity to do so once they are ready.

With regards to untitled Indigenous communities, consultations will be done with these groups and following titling, these communities will also be given an opportunity to participate in the readiness programme,

Extending the titling process to untitled communities is another important consideration for the REDD Strategy. This is considered as an essential element to ensure that the Amerindians have the rights to their resources.

Indigenous people and forest dwellers have an important and direct role to play in ensuring their benefits are secured. They will also continue to be exposed to various aspects of sustainable forest management and other uses of the forest that will be REDD friendly. They will also part take in discussions so as to ensure equity in the distribution of REDD benefits, secure land rights and promoted REDD as a positive contributor to poverty alleviation as well as the design of alternative economic opportunities; providing local knowledge of the forest and its past uses; training & forest policy; field based technical work, data collection & monitoring; and information sharing and dissemination.

c) Technical Programs

Guyana's low historical deforestation and degradation emissions do not accurately predict immediate expected future higher emissions. Guyana's reference scenario will include modeling of these probable future projected emissions. Readiness funding will produce maps of deforestation and degradation patterns, and the modeling will be based on both spatial and non-spatial data inputs and assumptions. This technical capability will also address the methodology to measure emissions from degradation and to create systems to monitor improvements from SFM and RIL.

The log tagging and tracking system is to be further enhanced by the use of bar codes and hand held scanners, a system of wireless networking amongst key stations, and use of remote sensing to detect illegal activities in the state forest estate. These improvements will provide useful information to enhance field monitoring and chain of custody tracking to quickly identify illegal activities.

The national level inventory would provide an estimate of the carbon stock. It will also enable the GFC to assist Amerindian Communities and other private forest owners in developing informed management and community development plans for wider management of the forest resources. In addition, it is noted that incentives for REDD can be effective only to the extent that they adequately compensate communities, private individuals, corporate land owners, and small-scale loggers that have legal access to State Forest Permissions for protecting and sustainably managing the forests.

The formation of a national forest fire management strategy and action plan will reduce the threat of uncontrolled fires which have the potential to damage expanses of forest and increase emissions. This program is relatively low cost to implement and has high probability to reduce unwanted fires and emissions. It is reported that the contribution of this driver to deforestation is small in Guyana, however this has not been officially recorded at a given percentage level.

For which aspects of the RPP does the country seek external support?

Guyana seeks support for all Components of the RPP. There will be counterpart in kind support for each aspect as well.

Component 1: Land use, forest policy and governance quick assessment

Summary

Guyana's Low Carbon Development Strategy (LCDS)

Guyana's draft Low Carbon Development Strategy sets out a vision through which economic development and climate change mitigation will be enabled through the generation of payments for forest services in a mechanism of sustainable utilization and development. The result would aim to be the transformation of Guyana's economy whilst combating climate change. The Strategy has four key dimensions: value of Guyana's forests, low carbon development opportunities, adaptation plans, and the involvement of all Guyanese.

If Guyana achieves this, it would protect its forest and simultaneously seek a development path that maximizes the growth of low-carbon economic sectors and minimizes deforestation and high-carbon economic activity. The LCDS addresses various aspects of climate change including mitigation, adaptation and investments in high potential low carbon sectors.

The draft LCDS outlines the supporting role of Guyana's participation in the REDD process.

The draft LCDS also notes that Guyana RPP will allow for measures to be put in place to ensure that roads (and other infrastructure) in forested areas do not lead to increased deforestation or degradation, as has happened in other rainforests in the past. As part of the LCDS, independent international organizations were contracted to assess the state of forest law enforcement and governance in Guyana. This will include an assessment of current levels of deforestation and degradation in Guyana, as well as an assessment of the carbon impact of current logging practices. These aspects are also part of the RPP implementation.

The LCDS and RPP are two integrally linked documents with the former being the strategic framework and the latter the operational mechanism that will enable the model to be executed and monitored. The RPP therefore forms one part of the LCDS.

At present, a national approach to assess forest carbon stock has not been developed for Guyana and needless to say, implemented in Guyana. Several aspects have however been addressed to some extent, in terms of assessing change in land cover through remote sensing imagery analyses and forest inventory assessment. Additionally, some work has begun in terms of biomass estimation in various soil types. There still however, needs to be a methodological assessment model developed to assess forest carbon stock at the national level drawing in some way, on the resources and results of these steps already initiated.

A quick assessment done of land change at the national level, formulated an assessment of the effect of the main drivers of deforestation and degradation in Guyana. Mining seems to be the single most major cause of degradation within the State Forest Estate. According to the baseline information in 2008, approximately 24, 428 ha of forests was

cleared due to mining activities and another 21, 903 ha of forests was cleared for agriculture. The most degraded forests areas are found in the North-West region of the country, which is traditionally known to have the highest concentration of mining concessions.

Several agencies work in concert to address natural resources issues at the level of policy, planning and management, in Guyana. These include the: Guyana Forestry Commission, Guyana Lands and Surveys Commission, Guyana Geology and Mines Commission, Ministry of Amerindian Affairs, and the Environmental Protection Agency among others.

The foreseen role of international and local donors is both in lending technical and financial support to activities planned at a national level. The involvement of these bodies has so far contributed greatly to the basic knowledge and technical base available in Guyana.

Forestry Sector in Guyana

The forest resources of Guyana are used for multiple purposes including the harvesting of forest produce, agriculture, research, eco-tourism, sustaining the livelihood of Amerindian communities, conservation and protected areas management and biodiversity reserves protection. Forests are an integral part of Amerindian culture and communities make use of forest resources as a source of food, building materials, fibres for textiles and weaving, medicine, tannins and dyes.

Between 1992 and 2009, the contribution of the forest sector to GDP has varied between 2.3% to 4.9% and in 2007 it is recorded at 3.86%. Guyana's population varied between 738,965 and 781,164 with a total population recorded at 2007 of 763,719. (See full table in Quick Assessment Report).

Employment related to the forest sector is estimated at 26,000. This data does not include family based forest use and as such should not be used as indicative of the full importance of forests to rural communities.

as at December 31, 2008

Classification	Count	Area (Hectares)	% Area Type	% Total Allocation	% State Forest
Production Area Allocations					
State Forest Permissions (SFP)	358	1,148,046	17.5%	14.3%	8.4%
Wood Cutting Lease (WCL)	4	70,889	1.1%	0.9%	0.5%
Timber Sales Agreement (TSA)	25	4,237,570	64.6%	52.7%	31.0%
SFP Conversion Areas	21	497,846	7.6%	6.2%	3.6%
State Forest Exploratory Permit (SFEP)	3	606,233	9.2%	7.5%	4.4%
Total Production Area Allocations	411	6,560,584	100.0%	81.5%	48.0%
Permanent Research & Reserve Areas					
Iwokrama Research Site	1	371,592	25.0%	4.6%	2.7%
GFC Forest Reserves	11	17,796	1.2%	0.2%	0.1%
Other Research & Reserve Sites	3	1,095,955	73.8%	13.6%	8.0%
Total Research and Reserve Areas	15	1,485,343	100.0%	18.5%	10.9%
Total Forests Allocated	426	8,045,927		100.0%	58.8%
Unallocated Forests		5,632,689	41.2%		41.2%
Total State Forests		13,678,616			100.0%

Summary of State Forest Allocations

Source: Forest Sector Information Report Half Year Review (Jan- Dec 2008)

Institutional Framework & REDD

The following describes the various agencies and organizations and a description of their role in climate change & REDD.

The Office of the President

The Office of the President is responsible for overseeing climate change initiatives at the national level and provides direction in climate change and REDD policy. The overarching policy and developmental framework for climate change in Guyana is the Low Carbon Development Strategy (LCDS) which will be launched shortly. REDD is one component of the LCDS.

Ministry of Agriculture

The Ministry of Agriculture has the responsibility for the forestry sector, and has also been responsible for a number of departments that have responsibility for various aspects of climate change and REDD activities. These Agencies include the Hydrometeorological (Hydromet) Division and the National Drainage and Irrigation Authority. The Agricultural Ministry remains integral to the coordination and implementation of REDD policy and activities.

Guyana Forestry Commission

The GFC is responsible for the management and regulation of Guyana's State Forest Estate and the implementation of REDD activities in Guyana. The GFC's main responsibility is policy enforcement, sustainable forest management, community forestry and planning the effective utilization of Guyana State Forest Resources. It coordinates the activities of the REDD Secretariat.² The REDD Secretariat will be responsible for the facilitation of REDD activities.

The passage of the Forests Act in January, 2009, now provides the GFC with a broader range of powers to regulate enhanced forest practices including conservation operations for purposes of carbon sequestration and environmental services and as such, the GFC is therefore expected to play an increasingly pivotal role in implementation, monitoring, and enforcement of REDD activities.

Guyana Geology and Mines Commission

The GGMC is tasked with regulating, all activities in the mineral sector including providing advice to the Government on mineral policy. It regulates the extraction of minerals from large scale (500- 12,000 acres) mining operations, medium scale (150- 500 acres) mining operations and small scale mining operations.

The Mining Act provides for the management of both large and small scale mining claims. Environmental management of both large and small scale operations at the field and policy levels are monitored and implemented by the GGMC. The EPA also has environmental oversight for mining operations.

Collaboration Amongst Agencies in REDD

It is expected that in undertaking work on REDD, implementation will involve coordination and collaboration of the GFC and the REDD Secretariat with other Ministries and Agencies. Whilst agencies such as the Environmental Protection Agency (EPA), Guyana Land and Surveys Commission (GLSC), Guyana Geology and Mines Commission (GGMC), Hydromet Division and the Office of Climate Change of the Office of the President, will provide support within their respective mandates, Ministries such as the Ministry of Amerindian Affairs (MOAA), Ministry of Finance (MOF) and other Ministries will also play supporting roles in REDD initiatives. Locally-based international NGOs such as CI and the World Wildlife Fund (WWF) can also contribute to this process.

Natural Resources and Environment Advisory Committee

The NREAC comprises policy and technical representatives that provide guidance and technical review and support to Cabinet. This sub-committee is chaired by the Prime Minister and coordinated by the Adviser to the President on Sustainable Development. This technical committee comprises representation of key Government entities and provides technical review, coordination and guidance. Natural resources issues, e.g. mining, forestry and agriculture are discussed and solutions are developed at this level.

Summary of Key Non-Government Stakeholders & Their Role in REDD

Ministry/Agency	Expected/Tentative Role in REDD
Amerindian Communities	Design & implementation of Proposal. Implementation of pilot projects.
Community-based NGOs	Support the implementation and management of community-based conservation projects, including restoration of degraded lands adjacent to protected areas.
International NGOs and multi-lateral institutions	Support Government of Guyana, implement projects within Guyana
Private Sector	Finance and implementation of REDD Projects

	(comprising the following sectors: forestry, mining, agriculture, tourism, manufacturing, training based institutions, financing & financial services who would execute functions that affect REDD projects through natural resources utilization, directly or indirectly)
Other Forest based Communities	Design & implementation of Proposal. Implementation of pilot projects.
Civil Society	Support and advise on REDD Projects and implementation.

Summary of Key Government Stakeholders & Their Role in REDD

Ministry/Agency	Role in REDD
Office of the President	Political leadership, policy and strategy setting including international representation of climate change issues and agenda for Guyana
National Climate Committee	Policy and strategy relating to climate change adaptation and mitigation. Members come from government, private and public sector, NGOs and other stakeholder agencies
Ministry of Agriculture	Oversees the forestry sector and the GFC. Houses Hydrometeorological Service and Office of Climate Change
Ministry of Amerindian Affairs	Support social, economic and cultural activities in Amerindian communities
Ministry of Finance	Can be expected to become engaged in REDD if REDD payments come to the Government of Guyana
Guyana Forestry Commission.	Manage and regulates the utilization of state forest while ensuring an optimum and sustained yield of forest produce and maintenance of the environment
Guyana Geology and Mines Commission	Manage and regulates the extraction of mineral resources of Guyana. Includes granting and enforcing mining licenses.
Guyana Lands and Surveys Commission	Advise the government on policies relating to public lands and land surveys and to administer and enforce all laws to public lands and land surveys.
Environmental Protection Agency	Promote, facilitate and coordinate effective environmental management and protection; and the sustainable use of Guyana's natural resources.
REDD Secretariat	Develop coordinate and implement national policy and Readiness Preparation Proposal for World Bank FCPF
Hydrometeorological Service	UNFCCC Focal point and DNA. Responsible for implementing climate change projects in Guyana.
University of Guyana	Training of personnel at tertiary level.

Source of Elements of Table: Biodiversity Mainstreaming Through Avoided Deforestation, Guyana Case Study – Second Draft. Conservation International, IDB and GFC. (BMAD-GCS) Project (GY-T1058) Technical Paper D

Land Tenure System in Guyana

Land tenure in Guyana is administered under the following categories:

1. State owned land
2. Privately owned land

1. State Owned Land

In Guyana, the land use structure provides for the mining sector on State Land to be managed by the GGMC and

forestry activities on State Forests, by the GFC. With this in place, the national structure provides for the NREAC and the Land Use Committee to provide guidance that allows for the integrated management of these key natural resources. As such, tenure to a particular area with multiple potential uses is enabled through these Committees.

Land uses are classified into the following areas:

- a. forestry
- b. mining
- c. agriculture
- d. protected areas
- e. other land based uses

a. Forestry

The Guyana Forestry Commission is responsible for the management of the State Forest Estate. The GFC has oversight on the enforcement of forest laws and regulations, monitoring and control of social and environmental impacts of operations within the State Forest estate and collection of revenues. The Commission is also responsible for data collection of the national forest resources, conducting of forest resources and inventories as well as making recommendations of forest dynamics (silviculture, planning & allocation of concession areas) and prescribing standards and preparation of operational guidelines for forest management. Some sections of Guyana's forests are characterized by soils of low fertility, making these areas unsuitable for agricultural development. At the end of 2008, production of 275,319m³ of logs, 18,722m³ of roundwood, 66,958m³ of sawnwood and 20,631m³ of plywood were recorded. Other products included, fuel wood (comprising of charcoal and firewood), splitwood (shingles and paling staves), wattles, manicole palm and mangrove bark were also produced in the year. All of the above mentioned products recorded a decline in production volume when compared to 2007.

b. Mining

Lands identified for mining fall under the purview of the Guyana Geology & Mines Commission (GGMC). The GGMC is responsible for regulate all activities in the mineral sector on behalf of the Government as well as to provide the basic prospecting information and advisory services on the available economic mineral prospects. The Commission acts as a national repository for all information relating to geology and mineral resources which will facilitate an understanding of the resource base of the country and provides advice to the government on appropriate mineral policy matters so that Guyana's mineral resources can be rationally developed and utilized.

c. Agriculture

Lands for agricultural usage are administered by the Guyana Lands and Surveys Commission. The Commission prepares and distributes leases for agricultural lands. Large scale agricultural lands are limited to the coastal plain of Guyana. To date, some large scale agricultural business projects are under consideration.

d. Protected Areas

As of today, there are three (3) protected areas, totaling 486, 000 hectares of land and 2.3 % of Guyana's land area. The management of these areas falls under the responsibility of the National Parks Commission and the Environmental Protection Agency.

During the preparation phase, the REDD Secretariat will work with the Office of the President and the EPA, as well as other partners, on protected areas under the Guyana Protected Areas System project, at site levels. Some examples of these include Shell Beach, Kanuku Mountains, and Kaieteur National Park.

The GoG will continue to work with partners like KfW and WWF, as well as others, in this regard.

e. Other Land Based Uses

This includes lands identified for urban and infrastructural development, such as the proposed Linden to Lethem Road Corridor. These lands are also administered by the GL&SC.

With respect to roads, while there are some parts of the forest are inaccessible, however there are some roads in areas. Logging and mining concessions have contributed to the development of these both within and around concessions.

How the State Plans & Manages Land

Government lands are administered by two main authorities, along with the GFC and the GGMC:

- the Guyana Lands & Surveys Commission (for mainly agricultural development on State lands)
- the Central Housing & Planning Authority (for urban & housing development)

The State plans and manages land through the Guyana Lands & Surveys Commission and cooperation with the natural resources agencies of Guyana, namely the GFC, GGMC, National Parks Commission. The Guyana Lands and Surveys Commission (GLSC) was established on June 1, 2001, through the implementation of its Act, Act No. 15 of 1999. The establishment of the Commission replaced the former Lands and Surveys Department of the Ministry of Agriculture. This new Act allowed for greater responsiveness of the institution through improved service and greater accountability. The Commission was established as a semi-autonomous agency to effectively fulfill its mandate.

Previously, before there was any established land use planning in Guyana, large tracts of land would be identified, cleared, demarcated and simply distributed for agricultural development and housing. This is the case for areas along the Linden Soesdyke Highway.

The GL&SC now refers to region land use maps to identify areas that can be opened for agricultural development. These regional maps zone areas for various forms of land use that would be suitable for the development of the area, land uses such as agriculture, industrial development, cottage industries, infrastructural development etc. These maps assess only State Lands, excluding mining and forestry concessions.

Land Info System- GINRIS

Guyana Integrated Natural Resources Information System (GINRIS) is an existing database that comprises land use data on the major land uses in Guyana. This database is housed at the GL&SC.

This system was established to develop the GIS capacity in Guyana & to serve as repository for national GIS information. The objective was to have one central database where all of the information could be stored and accessed. GINRIS has mapping coverage of 1 : 50,000 mapping scale coverage of country and allows for data sharing by the regulatory natural resources agencies which in turn allows for better coordination amongst agencies. It also allows for the use of information that is standardized.

2. Private

Lands that are privately owned are divided into two categories:

- a. Amerindians
- b. Non- Amerindian

Amerindians total approximately 9.2 percent of Guyana's population and currently own approximately 13.9 percent of the land. With regards to land titling, Amerindian communities can be classified into four (4) groups:

- Titled communities and Titled Communities that have applied for extension
- Untitled communities & communities in the process of becoming titled
- Communities engaged in legal cases regarding boundary demarcation and other issues
- Existing communities that do not yet meet the criteria for titling

Amerindian Act

The Amerindian Act gives Amerindian communities legal ownership over Amerindian lands.

Two of the main important achievements of the Amerindian Act are as follows:

- a) it establishes a procedure for land claims to be settled;
- b) it transfers power from the Government to Amerindian Communities and Village Councils so that Amerindians can make their own decisions about how they want to develop.

Land & Land Acquisition under the Act

The Amerindian Act allows for Amerindian communities to decide:

- who can occupy what land;
- what use can be made of the land & for how long;
- traditional rules on hunting and fishing & farming

In obtaining the land, under the Act, a community has to submit a written application and provide some other basic information such as why they want the land and how they intend to use it. If they already have title to the land, and are seeking an extension, they will also have to demarcate their existing titled land. The Minister is required to carry out an investigation into this application within six (6) months of the request. This would involve discussions with the

community. Once the investigation is complete, the Minister has a further six (6) month to make a decision.

If the Minister approves this request, a title will be granted. If an approval is not given, the community can appeal this decision in court.

To date, a total of ninety six (96) communities have received titles to their land. The titling process is an ongoing process that has proven to be very expensive and time consuming. The Government is fully committed to this process.

In the Upper Mazaruni Region, a legal land titling issue is currently at the level of the courts. Given the large size of the area requested for titling, the full requested area could not be granted.

Some of the communities that are involved in this case are as follows:

- Chinoweing
- Phillipai
- Jawalla
- Kato
- Kamarang Warewata
- Wamaradong
- Puruima

a. Titled Communities & Titled Communities that have applied for Extension

Ninety-six village communities have title over their lands; Amerindian lands are owned collectively by the whole village and administered through an elected Village Council that has the power to make legally-binding rules for everyone within village lands. Many of these titled communities are surrounded by satellite Amerindian villages.

Extensions

There are currently a number of titled communities that have requested extension to their lands.

b. Untitled communities & communities in the process of becoming titled

There are currently ten villages do not yet have formal legal title, nine of which have submitted requests for title to the Ministry of Amerindian Affairs.

In the Upper Mazaruni, there is an existing court issue regarding potential traditional land claim.

c. Existing communities that do not yet meet the criteria for titling

There are communities that do not yet meet the criterion for titling. This criterion stipulates that a community must have been in existence for 25 years and have a total population of 150 persons. This is one of the areas that the Ministry of Amerindian Affairs, in collaboration with the REDD Secretariat will seek to address, during the preparation phase.

Forestry Activities & Amerindian Communities

Once a title is transferred to an Amerindian community, the community owns the forest resources on that land. Under the Act, the community will have a right to decide who can use the forest.

Mining & Amerindian Communities

The Amerindian Act provides two very important rights for Amerindian Communities:

- Amerindians have traditional privilege to mine- this is recognized in the Amerindian Act
- Amerindians have a veto over mining on their titled lands except for if there is a larger scale project in the public interest.

Anyone who wants to do mining on titled Amerindian lands must receive consent from the community before they can do so. Although Amerindians do not own the minerals, they will control access. Hence they can negotiate with the miners and attach the conditions they want.

In protecting the Amerindians rights, the Act stipulates that miners must provide the communities with all the information that they need. The Act further provides that receive benefits from mining.

The miner needs to also offer employment to the community before he brings people from the outside. He needs to offer to buy food and materials from the community. While the community is not bound to take up these jobs or offer to sell anything, the miner is obligated to give them the first chance to do so.

With regards to small and medium scale mining, if the community refuses to consent to the activity, then it does not materialize. With regards to large scale mining, if the community refuses to consent to the activity, then that activity cannot take place, unless the Government declares that the mining is in the interest of the public and therefore should go ahead. If the community disagrees with this decision, then they can appeal this in court.

If there has been environmental degradation as a result of mining, Amerindians can seek injunctions through the court, under the Environmental Protection Act, 1996, to stop the activity. They can also ask the court for damages for harm that they might have suffered. Under the Amerindian Act, the miner will have to enter into an agreement with the Amerindian community to take reasonable steps to avoid damage to the environment, to avoid polluting the water supplies etc. Should he breach this agreement, the community can sue him for damages.

With regards to the future identification of large scale mining on Amerindian land, work will be done in the Preparation phase with the GGMC to advance the process of identification of areas where large scale mining exists and potential areas that may be earmarked for such activities. Identification of potential areas of conflict of large scale mining on Amerindian lands is an important aspect of the titling process.

The village of Icinero, Mazaruni, was recently involved in a land issue regarding mining. The issue was taken to Court, and the Court made a pronouncement on behalf of the community.

Agriculture in Amerindian Communities

Agriculture within Amerindian communities exists in the form of shifting agriculture. In this, plots of land are cultivated temporarily, and then abandoned. This form of agriculture often involves clearing of a piece of land followed by several

years of wood harvesting or farming.

Protected Areas & Amerindian Communities

The State cannot establish any protected areas over titled lands unless the Amerindian community freely gives its consent. With regards to untitled Amerindian lands, the State cannot set up a protected area that will restrict Amerindian rights or privileges to use or occupy that land unless the Amerindian community freely gives its consent.

Governance and Legislative Structure

Guyana is divided into 10 administrative regions with varying population density and economic activities. The low population density and difficult terrain in some regions make it costly to provide extensive social services and develop infrastructure critical to support economic production. Guyana’s legal system is based on English common law with certain admixtures of Roman-Dutch law. The country is governed by a Chief of State which is the President, Prime Minister, and Cabinet of Ministers appointed by the President, responsible to the legislature. Guyana’s legislative system is based on the National Assembly, which comprises 65 seats; members elected by popular vote, also not more than 4 non-elected non-voting ministers and 2 non-elected non-voting parliamentary secretaries appointed by the President; to serve five-year terms. With regards to the Judicial System, there is a Supreme Court of Judicature, consisting of the High Court and the Court of Appeal, with right of final appeal to the Caribbean Court of Justice (CCJ).

Summary of Efforts to Address REDD

There have been many direct and indirect efforts by the GoG to reduce deforestation and forest degradation through the various natural resources agencies as outlined in the table below:

Table Showing Efforts to Address REDD

Efforts	Outcomes	Gaps/ Challenges	Opportunities
Implementation of the Code of Practice for Harvesting Operations that allows for good practices to be implemented in SFM and legality, including a maximum allowable cut, the harvesting of trees based on proximity limitations, and compliance with the GFC’s social & environmental guidelines, annual and management plan requirements, execution of forest inventory, ESIA, national log tracking system, legal verification system, strengthened field monitoring,	The issuance, planning and management of large concession areas are executed in keeping with GFC’s guidelines which themselves lend to the implementation of SFM and legality which allow for deforestation and degradation to be kept to a minimum There is managed extraction, control of gaps size openings and improvements in GFC’s social and environmental guidelines. Also protection of buffer zones in forest areas. Progress in compliance with SFM.	Community groups require additional capacity to implement all aspects of the CoP. In some cases capacity of institutions needs to be strengthened (GFC, GGMC) New areas allocated would have to undergo capacity building and in some cases commitment of additional resources to enable these to be executed. Implementation of the legality assurance system needs to be advanced. Training in standards of legality needs to be extended in a larger way to forest communities.	With compliance by forest land holders, deforestation and forest degradation at the national level will be maintained at the existing low rate and can even be lowered in the future Maintenance of a high level of legality will foster the maintenance of a low rate of deforestation and degradation.
The GFC community forestry development programme capacity building sessions have been and continue to be held with communities in forest law, forest inventory & management	A stronger compliance with FL, FI and FM allows for sustainable use of forest resources, thereby decreasing deforestation and forest degradation	More resources needed for additional communities to be targeted	With compliance by both large and small scale operators, deforestation and forest degradation at the national level will be maintained at the existing low rate and can even be

			lowered in the future
Land titling	96 village communities have title over their lands	10 villages do not yet have formal legal title Some villages currently exist without title because they do not yet fit the criteria for titling	With the implementation of REDD and the receipt of revenues generated from REDD, the land titling process can be sped up.
Effective implementation of the mining regulations	A stronger compliance with mining regulations allows for sustainable use of forest resources, thereby decreasing deforestation and forest degradation	More resources needed for additional communities to be targeted	With compliance by both large and small scale operators, deforestation and forest degradation at the national level will be maintained at the existing low rate and can even be lowered in the future
Monitoring of Infrastructural development	Conducting of Environmental Impact Assessments (EIAs) for large infrastructural projects & preparation of Environmental Management Plans for smaller scale infrastructural projects Monitoring & oversight by the Ministry of Public Works & Communications (MPW&C), EPA and other sector agencies such as GL&SC, Ministry of Housing (MoH)	Need for more qualified personnel on staff of both EPA & MPW&C to oversee planning & implementation of projects	Greater interagency coordination can allow for more effective monitoring and oversight of projects Capacity building and support to better understand REDD & implications of infrastructural development on REDD will lead to better M&E.
Efforts have been made to limit the effects of agriculture on the forest resources.	Sustainable agriculture practices have been developed and implemented among operators.	More efficient technologies needed Need for more qualified personnel	Capacity building and support to better understand REDD & implications of agricultural development on REDD More capacity building & support in various areas

The Assessment of forest sector and drivers of deforestation will be deepened in the design phase to inform the design of the REDD Strategy.

Indicator:

1. Report to update Assessment on Drivers of deforestation. This activity will be done in year 1.

Budget:

The total cost for this Component is US\$320,000 of which US\$25,000 is being requested from FCPF.

Component 2: Management of Readiness

2a. Convene a National REDD Working Group to coordinate REDD activities, and how REDD will be integrated into the existing land use policy dialogue

As part of Guyana's efforts to provide an enabling environment for the facilitation of REDD activities, a working group has been established in the form of a REDD Secretariat (RS). The Secretariat has been set up as a part of the Guyana Forestry Commission (GFC) and will be responsible for the coordination of national REDD activities of the country. The REDD Secretariat will oversee the implementation of all REDD activities under the Low Carbon Development Strategy framework, guided by the Office of the President with the involvement of the National Climate Committee which includes stakeholders from both State and non State agencies. It is also tasked with the Consultation and Outreach activities, dissemination of results of the assessment of the carbon stock potential of Guyana's forests. This Secretariat will report to the Guyana Forestry Commission as well as the National Climate Committee³ of Guyana. In addition to reporting responsibilities, the RS will collaborate with the NCC as necessary. The RS will be responsible for overall coordination as well as being the permanent operational team for REDD nationally. The Secretariat has been established as the national working group to coordinate all national REDD activities as well as to advise of policy formulation and implementation.

While the REDD Secretariat will be managed by the GFC, it will not operate in isolation of other sector agencies within the national framework. Rather it will involve inputs and collaboration from agencies and stakeholders such as:

- Office of the President
- Ministry of Agriculture
- Guyana Lands and Surveys Commission
- Indigenous Community groups (APA, NDAF, GOIP and TAAMOG), Toshaos, community residents
- Non Governmental Organizations (NGOs) such as Conservation International (CI), Iwokrama and World Wildlife Fund (WWF).
- Environmental Protection Agency
- Ministry of Local Government and Regional Development
- Ministry of Amerindian Affairs
- Guyana Geology and Mines Commission
- Guyana Energy Agency
- Private Sector Commission
- University of Guyana

These agencies will meet at least once every quarter. It will also work in close collaboration with the National Climate Committee (NCC) which is primarily responsible for deciding on policy and projects on climate change matters.

The government intends to also set up an REDD Consultation and Outreach Committee (RCOC), comprising representatives of the following agencies and organizations:

- REDD Secretariat
- Guyana Forestry Commission
- Ministry of Amerindian Affairs and other relevant Ministries
- National Tshao's Council (NTC)
- Office of Climate Change, Office of the President
- Relevant NGOs and Community Groups (including Indigenous Peoples groups)
- Private Sector

The Committee will be set up with the intention of having the indigenous peoples and other forest dependent communities represented during implementation of consultations and the active involvement in REDD activities. It will be the oversight and advisory body for the REDD consultations; The consultation programme will be planned and executed in accordance with the national agenda for consultations on climate change.

The RCOC will contribute to relevant aspects of the proposal. This Committee will convene monthly to discuss and report on the following:

- Progress in implementation of consultation plan, identification of next steps and adjustments to be made
- alternative economic activities which the communities would be interested in pursuing and updates on the status of implementation of these activities
- issues/constraints encountered
- identification of areas for capacity building and training
- conflict resolution & investigations of complaints

The RCOC will be the interface between the various communities nationally and the government. Further, through the REDD Consultation and Outreach Committee; there will be representation by NGOs. It will be ensured that the NGOs participating will have experience of community development and forestry practices, locally as well as internationally.

Programmes to support and develop capacity will be designed. Based on the fact that there will be representation by the Ministry of Amerindian Affairs and the National Tshao's Council and NGOs and leaders, limitations and constraints experienced by the communities can be identified and presented during the meeting of the Committee. This will allow for better and more informed decision making at the national level.

The members of the RCOC will be integrated into the development of the REDD process from implementation; hence can assist with the development of the initiative to ensure that it is appropriate to the needs of the forest dependent groups.

Conflict resolution as well as complaints will be dealt with at the level of the RCOC. A protocol will be developed to

detail the manner in which complaints will be investigated and by whom; timelines for investigation of complaints so as to prove validity as well as actions to be taken to mitigate these complaints.

In cases where conflict resolution is necessary, the RCOC will deliberate on the matter.

Criteria for Selection of NGOs for RCOC

1. There must be representation by all indigenous groups on the RCOC
2. The involvement of NGOs will be determined by the following:
 - a. Involvement in previous activities in forestry, mining, agriculture or other land uses;
 - b. Involvement in previous activities relating to environmental services management and or utilization
 - c. Previous interaction with indigenous groups involving activities in land tenure and natural resources utilization;
 - d. International experience in carbon financing initiatives (including REDD) to enable the benefits of lessons learnt from previous experience

It should be reemphasized that the Ministry of Amerindian Affairs, National Toshihos Council and NGOs including Indigenous People's groups will be actively involved in the process as they would be part of the planning process as well as will be part taking in organizing and leading some of the sessions.

2a2. How would the REDD debate be linked and integrated into the overall land-use and forest dialogue?

REDD will be incorporated into existing forest policy dialogue addressing a wide range of forestry and development topics (e.g., forest policy, land tenure, sustainable forest management, etc.).

Decisions made by the RS can be further integrated into relevant national programmes through the NCC which is primarily responsible for looking at programmes on climate change matters.

In addition to this, a process of consultation will be carried out to establish the pros and cons of the REDD initiative with the agencies responsible for land administration and land use (GGMC, GL&SC, EPA etc). The outcomes will be further discussed with all other stakeholders and subsequent results added to suitable policies so as to address the issues raised by stakeholders at all levels.

Since Indigenous communities and other forest dependent dwellers will also be affected, emphasis will be placed on ensuring benefits, land use rights and tenure, and the mitigation of potential environmental and social impacts. This would involve collaborative effort of the REDD Secretariat, the MoAA, Indigenous Peoples Organizations, Indigenous Community Leaders and other relevant agencies.

Mining claims will also be dealt with through the Land Use Committee, which comprises the Guyana Forestry Commission, Guyana Lands & Surveys Commission, the Guyana Geology & Mines Commission and the Environmental

Protection Agency.

In Guyana SFM practices are overseen by the GFC. Through the implementation of the RPP, the option of monitoring of forest concession activities via an independent body will be explored. Also, the option of 3rd party certification will be considered. To date, the IWOKRAMA Centre has received FSC certification for an area within the Project Site.

Proposed Agenda

- Call to Order
- Discuss minutes of previous meeting and receive update from the RS
- Discuss Report of the RCOC on progress with consultations
- Review developments in work on identification of REDD candidate activities.
- Review Progress on SESA
- Review Progress Report in the design of the MRVS, and reference scenarios,
- Review of Progress on REDD implementation framework, land titling and benefits sharing system, assessment of capacity building and investment.
- Monitor and evaluate progress based on work plan
- Make recommendations

Outcomes

1. The promotion of alternative sustainable poverty reduction development programs that are pro-poor and inclusive.
2. Ensuring the quality and inclusiveness of consultations;
3. Conducting and or overseeing all studies and activities listed in the RPP;
4. Ensuring coordination and synergies among all activities and policies related to the REDD process in Guyana; and
5. Identifying issues, address conflicts, proposing remedies for the way forward.

Schedule of Activity

ACTIVITIES	Year 1	Year 2	Year 3
1. Coordination of RS & RCOC			
1.1 Enable systems of coordination with NCC			
1.2 Development of schedule & structure for progress reports & consultation plans from both RS & RCOC			

1.3 Development of protocol to deal with complains & conflict resolution			
1.4 Development of system to address discussions on & implementation of alternative economic activities wit as well as development of an appropriate & equitable benefits sharing system			
1.5 Review progress on RPP components.			

Indicators of Performance:

1. Meeting reports of the RS & RCOC
2. SESA Reports
3. Communications Strategy
4. Consultation Reports

Budget

The total cost for this Component is US\$1,571,000 of which US\$467,000 is being requested from FCPF.

2b. Prepare a REDD Consultation and Outreach Plan

A consultation and outreach plan is a vital component for the preparation of the Readiness Preparation Phase. It is geared at gathering information, issues and opinions from all stakeholders and processing it so that possible solutions and policies can be formulated or amended to address concerns of participants. This activity will inform stakeholders, provide training, seek inputs and address issues and concerns raised by stakeholders through a continuous iterative two way process of outreach programs, consultations and dialogue, incorporation of ideas and effective dissemination of all relevant information.

This Consultation and Outreach Plan was developed by the REDD Secretariat with support from an international Consultant.

To achieve optimum participation, which would enable effective discussions and results, the consultation and outreach program will use the following methods:

- Workshops
- Interviews
- Formal and informal discussions
- Surveys
- Advisory groups
- Education outreach and school outreach programs.
- Training
- Community Planning Groups

Format for Consultation and Outreach

- Sensitization activities to be held within various forest communities throughout the country, informing community members about climate change and the activities of the REDD initiative which the GFC would be implementing.
- Documentation will be sent prior to the actual consultation exercises to enable prior planning for meetings by the communities.
- Workshops to facilitate further discussion where questions, opinions, and issues will be encouraged. These queries will be noted and followed up.
- Discussion on how training (theoretical and practical aspects on various subject area e.g. sustainable forest management and other forest uses that have minimal effect on the forest) will benefit participants thereby enabling them to be fully involved in REDD activities.
- Dissemination of results and feedback. Feedback will ensure that all communities are aware

All aspects of the consultation and outreach program will be fully documented and analyzed to determine how stakeholders input will be used and what policies should be put in place and which ones should be amended.

Topics for Discussion

- Current status of the Country's forest and Forest policies
- Deforestation and forest degradation – main causes and effects
- REDD – details, benefits sharing of incentives, impacts and risks, strategy etc
- Land use, land right and alternative livelihood
- Training
- The link between community activities and practices and the effective achievement of planned objective
- Implementation, Monitoring and verification of a REDD scheme
- Individual, community and national involvement in all of the above.

Upcoming Consultations

There will be national and sub-national consultations to sensitize as well as receive feedback with all stakeholders. The outcome of these consultations will be taken into account in preparing the REDD implementation agenda.

These sessions will target around 141 indigenous and forest communities across the administrative regions of Guyana, covering all forested areas.

Consultations will also be done at community level with all communities, as well as with other stakeholder groups such as Amerindian NGOs, academia and the private sector.

All records of the consultation process will be kept so that feedback on key issues raised during the consultation can be responded to in a suitable way. Relevant stakeholders will be informed of the outcomes and how their inputs will be used. The outcome of these consultations will be incorporated into related policies and programs.

The process will be done on a continuous basis so as keep stakeholders informed to deal with any issues that may arise before during and after the implementation of REDD.

This will be done through village captains, representatives, forestry officers, the REDD Secretariat personnel in the area.

The RCOC will be the main means by this communication will be facilitated. Though this, information can be disseminated by the GFC/RS to Amerindian communities and other forest dependent groups. Information will also be exchanged from the communities to the GFC/RS through this Committee. Communications will also be transmitted via the GFC field stations located around the country as well as through the Ministry of Amerindian Affairs and the National

Toshao's Council quarterly. Questions and answers booklets will be developed addressing issues of Readiness Preparation and REDD.

Quarterly reports will be prepared and submitted to funding agencies as well as relevant stakeholders on the progress of implementation of REDD nationally. These reports will provide details on projects being implemented, the status of these projects as well as constraints encountered.

These reports will be prepared by the REDD Secretariat and will be done so using information provided by the channels of communications mentioned previously. These reports will be circulated to the stakeholders for feedback as well.

The targeted potentially affected groups interested in the consultations would be residents of the specific community and representatives of the Government and non-Governmental agencies in the specific community or location.

Selection of participants from indigenous communities will be done via the village council and through the Toshao. The RCOC will liaise closely with the Ministry of Amerindian Affairs and indigenous peoples groups. Attendance with other groups of stakeholders will be determined in a participatory way with the RCOC.

The RCOC will plan, advise and execute consultations in collaboration with the REDD Secretariat. The mining sector will be included in consultation and outreach activities.

The REDD Secretariat would collaborate with other agencies for the identification of all stakeholders. Consultations will be done with the following stakeholders:

- Cross ministerial agencies responsible for land, land use and administration (all components)
- Indigenous communities and Community forest organizations (components 1,3,5,6 & 9)
- Forest workers, concessionaires, miners, etc. (components 1, 3, 5,6 & 9)
- Information dissemination Agents

Consultation and outreach will take place in various Amerindian communities and with any community forestry organization that may exist therein, because that is where REDD activities will occur and inhabitants be most affected. The majority of the locations are outside of the city and in the specific sites where REDD activities are likely to occur.

As new developments in the REDD scheme occur, consultation sessions will be held. This is to keep stakeholders informed on the development of the initiative. Because the communities are scattered and some only accessible by air, considering budget and time, consultations will be conducted. However, there will be constant linkage and distribution of information to community leaders and representatives in the area.

Participants will be selected through village councils in the case of Amerindian communities and through the regional and national focal agency for Governmental and regional stakeholders. NGOs will be invited directly to participate. Efforts will be made to include all stakeholders in implementing the proposed activities of the RPP. Components 2, 5

and 6 will have a more direct bearing on communities and as such, more extensive consultation will be held for these sections of the RPP implementation.

The RCOC will facilitate these discussions including on the design of an equitable benefit sharing system. The issue of equitable benefit sharing has been addressed in Components 4 and 6 of the RPP. This aims to achieve the “*Creation of transparent benefits sharing arrangements for targeted financial incentives for REDD*”. Special sessions will have to be held on the benefits sharing system that was designed.

Also, the GFC will consult with Amerindian communities on the implementation of REDD in order to determine options for REDD activities that are most appropriate and beneficial to Amerindian communities. .

Component 4 of the RPP also addresses the issues of clarifying land tenure arrangements as well as clarifying carbon ownership across different tenure and management options.

Constraints & Limitations

Some of the constraints that have been identified are as follows:

1. Conducting several rounds of consultations may be costly.
2. In consultations session, some segments may not participate as fully as other segments.
3. The views represented by some sections of communities may not represent the views of the entire community.
4. There may be overlapping and conflicting suggestions from various communities.

Expected Outcomes

1. Higher levels of understanding of the concept of REDD and the roles that different stakeholders will play in REDD;
2. Active involvement of stakeholders in REDD process
3. Involvement of stakeholders in developing and implementing the MRVS
4. Opposition/ concerns are well documented and integrated into the RPP
5. Development of an appropriate communications strategy
6. Concerns raised by communities incorporated into outputs of RPP

Schedule of Activity and Budget for Component 2 (both a and b)

Schedule	Year 1	Year 2	Year 3
1. Schedule of consultations developed			
2. Consultations Sessions held			
3. Feedback mechanism developed			

Responsible Agency: RS & GFC

Indicators of Performance

1. Reports from consultations (based on communities' inputs & feedback)
2. RCOC reports
3. Incorporation of relevant and applicable aspects of feedback into RPP

Budget (for Component 2a and 2b)

The total cost for this Component is US\$1,571,000 of which US\$467,000 is being requested from FCPF.

2c. Previous Initial Consultations Conducted

Over the period September 2008 to January 2009, initial consultation sessions were planned for and held with 27 community groups, many of which are indigenous communities: Great Falls, 47 Miles Mabura, Ituni, Kwakwani, Linden, Kwebana, Mabaruma, Port Kaituma, Annai Central, Surama, Nappi and Parishara, Moca Moca, Lethem, St. Ignatius, Santa Mission, Murataro, Bartica, Anna Regina, Supenaam, Charity, New Amsterdam, Corriverton, Batavia, Georgetown, Orealla, Three Friends Marie Elizabeth, Caria Caria, Community representative Group – Kanuku Mountains Protected Area, and Dora, Demerara River.

Within these main community meetings, representatives were also present from Katoka, Yupukari, Shea, Aishalton, Sand Creek, Wowetta, Kwatamang and Aranaputa.

Also, after the submission of the RPP of February 13, 2009, the GFC also had a session with the Amerindian NGOs of Guyana along with the Forest Products Association, the University of Guyana and the Guyana School of Agriculture. The NGOs that were invited were TAAMOG, APA, GOIP & the NDAF. This meeting was held on March 5, 2009 at the GFC and followed the format of the other sessions that were held earlier.

The initial Consultations were conducted within villages and communities in the 10 administrative regions of Guyana targeting specifically:

- Amerindian Communities and other forest dwellers
- Loggers & miners
- NGOs
- Government ministries and agencies
- General public (including students)

These sessions were conducted by the GFC in collaboration with the REDD Secretariat and addressed climate change, REDD and implications for its implementation in Guyana. They allowed for interaction between the participants and the presenters. Copies of the presentation as well as brochures containing general information on climate change were distributed at all meetings. At the end of each session it was emphasized that the meetings were just the beginning of a larger consultation process to be implemented within the latter part of 2009. A total of 15 local consultations were carried out in Amerindian communities. During consultations on Amerindian communities the GFC/RS was accompanied by a representative of the Ministry of Amerindian Affairs.

The sessions sought to garner stakeholder involvement through an informal and participatory approach which engaged the participants in discussions on climate change and its implications for the future of forest dependents persons from both an environmental perspective as well as a socioeconomic one. It then addressed the benefits of implementing a REDD strategy and demonstrated to the audiences how they could get involved in this, as well as the benefits that could be derived.

In addition to this, the RPP Component 2 (a & b) - Management of Readiness, was shared with Indigenous leaders working on a climate change action plan during a five day Guiana Shield Regional Meeting of Indigenous Leaders. This involved leaders from the Amerindian Peoples Association of Guyana, Organisatie Van Inheemsen (OIS) of Suriname and the Fédération des Organisations Autochtones de Guyana Village Amérindien (FOAG) of French Guiana, in coordination with the Coordinator of Indigenous Organisations of the Amazon Basin (COICA) and the Amazon Alliance. (April 13-17, 2009)

During REDD Consultation the GFC/RS discussed with communities alternative economic opportunities that the forest dwelling communities could embark upon once REDD was fully implemented to supplement their income.

In the closing of all the sessions, the GFC/RS had encouraged communities consulted to consider alternative economic opportunities which they would have considered feasible to embark upon. They were all informed that in follow up consultations they would be expected to present these ideas to the GFC/RS and discuss its feasibility for the community's development.

Reports on some of the above sessions are attached as Appendix 4 at the end of this Plan.

Issues Raised during initial Consultations that were incorporated into the Proposal

During the Consultations a number of issues and concerns were raised by residents, many of which were incorporated into the RPP. Some of these areas are as follows:

1. The issue was raised as to whether there would be a system in place to facilitate community engagement in ***alternative economic activities***.

As a result of this, the RCOC was tasked with the responsibility of “overseeing the implementation of alternative economic activities which the communities would be interested in pursuing and updates on the status of implementation of these activities; address issues/constraints encountered during implementation of these; identification of areas for capacity building and training; as well as conflict resolution & investigations of complaints.”

2. Another issue was raised was that of the occurrences of ***forest fires*** within the savannah areas of Region 9. This was included as one of the Component 8 in the development of the MRVS.

3. The need to make **maximum use of forest resources** was also highlighted by communities in making the point of moving towards added value forest activities for the benefit of the community. This has informed the inclusion of this area in the draft list of REDD candidate activities.

4. The recommendation made by **communities that they are best placed** in certain locations, to monitor plots established was taken note of and integrated into the plans for biomass monitoring where communities have been identified to assist in collecting data and monitoring established plots. This point has also been flagged in component 2 which outlines the areas in which communities will play a role in the work of the REDD Secretariat.

5. Communities have pointed out that they have noticed in some areas, that **certain species are no longer available** in the quantities that once prevailed in the past. Enrichment planting has been identified as a specific REDD strategy that will address this issue.

6. Several communities have pointed out that non timber forest production is an area that is of specific interest to their communities. As such, this was also flagged as a REDD Strategy. In several communities visited, work has already started in producing innovative and creative products from **non-timber forest products**. This was identified to be of not only economic benefit to the communities, but also for environmental sustenance by making use of the diversified resource base of the forest.

Key issues that will be explored in the preparation phase in consultation sessions include:

1. How REDD activities will affect the use of land and Amerindian Rights.
2. A Benefits Sharing System including the process of seeking inputs on same.

Component 3- Design the REDD strategy

Objectives of the REDD Strategy:

The objective of Guyana's REDD strategy is to enable the effective implementation of natural resources standards (policy, procedures and legislation) including monitoring and enforcement which is necessary to effectively address deforestation and forest degradation (maintain at a low level or to further reduce this level) in Guyana. It is the aim of the strategy to undertake an approach that is participatory, inclusive and integrates all levels of stakeholders, and will aim to address the sustainable development of Guyana. Further, the development of a REDD Strategy will be informed by the development of a number of pilot projects, demonstration initiatives, community programmes and study tours which will intensify the cultural movement at all levels (towards a full understanding and appreciation of the measures required for sustainable forest management and carbon trading and equitable benefits sharing).

3.1. REDD Strategy:

The activities for the REDD Strategy have not been fully defined and are expected to be as one of the outputs of the RPP. The outline of a few likely potential activities have been considered, which can be a starting point for discussions. These are as follows:

It is expected that Guyana's REDD Strategy will consider some of the following potential REDD strategies:

(1) Potential REDD Candidate Activities

- Utilization of non-timber forest products
- Expanding multiple uses of the forest (goods and services) for economic activities and income generation, including exploring the generation of environmental services benefits
- Exploring and developing added value forest production at the community level
- Reforestation of forest gaps as well as exploration of plantation activities
- Engaging communities in forest rehabilitation activities including and enrichment planting
- Enhanced the enforcement of compliance by miners and mining companies with GGMC & EPA requirement of reforestation on closure of mined out areas
- Stronger compliance by and improved capacity of miners of mining regulations.
- Agroforestry & Community agroforestry initiatives
- Development of the practice of SESA and mitigation plans for future infrastructural development
- Exploring options of forest certification/ legal verification
- Benefits sharing and monitoring of poverty alleviation outcomes

- Consolidation / strengthening of land and user rights
- Conduct assessment of the possibility of including Payment for Ecosystem Services (PES) and biodiversity into the MRVS

The method to develop Candidate Activities will be by studies, pilot projects and demonstrations.

(2) Demonstration/Pilot Initiatives

In the course of the preparation phase, the candidate activities will be discussed by stakeholders. Those that appear to be relevant, appropriate and feasible will be piloted as small scale projects in the fields. These will be accompanied by relevant studies, study tours and workshops to ensure that they provide the lessons learnt.

The Process that will be used to determine candidate activities is outlined below:

- Determine structure for implementation of pilot activities including administration, funding, and implementation
- Community outreach, communication and education on climate change, carbon project design and REDD incentives
- Undertake capacity building for carbon and pilot project activities
- Facilitate study tours with other counties to exchange experiences on potential field demonstration projects
- Establish clear criteria for evaluation and selection of pilot projects
- Identify pilot activity candidates and make selection based on criteria
- Develop and implement capacity building plan for field teams and local partners to implement pilots. Relevant pilot activities will be done in collaboration with local partners that have experience within these areas so as to build synergies. Some of the pilot activities are as follows:
- Define and launch initial pilot-projects to be used as demonstration projects
- Implement permanent site level monitoring plots, monitoring plan and methodology
- Define and implement socio-economic monitoring plans and methodology
- Analysis and testing of alternatives that address each deforestation and degradation driver (illegal mining and the construction of roads, slash and burn agriculture)

(3) Preparation Activities

Activities focused on building technical capacity in areas of application of required methodologies and measurements will also need to be conducted. These include, assessment of historical emissions from deforestation & degradation, projection and modeling of future emissions, develop methodology and monitoring plan and protocol to update biomass field estimates, create a national-level carbon methodology that includes project-level activities, and establish a capacity building plan for biomass monitoring activities as well as for GIS and remote sensing activities.

Note that there are overlaps with other RPP Components for some functions, with respective activities detailed elsewhere. These include governance and institutional issues (Component 4), which have overlaps with strategy (3). Components 7 and 8 overlap with Strategy (1).

Existing Gaps

These activities will be conducted to fill the following gaps that currently exist:

Within Technical Strengthening, there is currently a lack of:

- historical baseline
- projection of future emissions
- assessment of deforestation & degradation
- biomass field plots (permanent sample plots (PSP))
- capacity building plan for biomass monitoring, GIS/Remote Sensing
- national methodology for forest carbon stock assessment

Within Demonstration Initiatives there is a lack of:

- structure for implementation of pilot activities
- criteria for evaluation of pilot projects
- capacity building plan for field teams to implement pilots
- socio-economic monitoring plans & methodology

3c. Trade- offs analysis

While conducting of a trade off analysis is listed in the TOR, the following outline is expected to be followed:

- a. Conduct an evaluation of existing economic activities at the community level
- b. Through consultation, workshops with communities, assess the current economic and social benefits including livelihood and welfare support that existing economic activities provide
- c. Identify spin off benefits and costs that existing economic activities provide to local populations and nearby communities
- d. Assess and quantify the impacts on the environment of current economic activities
- e. Identify, through stakeholder consultation, suitable alternative economic opportunities that can be undertaken
- f. Assess and quantify the benefits and impacts (including costs) of such activities on the economic and social livelihood and the environment
- g. From the proposed alternative economic opportunities, identify suitable activities to be undertaken in keeping with the expressed needs of stakeholders.
- h. Assess the economics of the major land uses causing deforestation & forest degradation

The Consultation & Outreach Plan detailed in Component 2 will be used as a means through which this will be achieved. The RCOC, NCC as well as the GFC/RS will be the mechanism through which the trade offs analysis will be executed.

All assessments will be done taking the sustainable development of communities into consideration and included in all aspects of the analysis.

Expected Outcome:

The expected outcome of this component is a number of REDD activities and benefits sharing systems that have been informed by stakeholders that have benefited from pilot studies and tours and international experience. These activities must show the potential to reduce emissions as well as be applicable and relevant, monitorable, cost efficient and be the basis for Guyana's low carbon economy and equitable economic development. It will also substantially improve standards and add value, encourage non-timber forest activities, lead to higher employment, sustained and improved indigenous livelihoods, and economic growth.

Potential REDD Activities

Drivers of Deforestation	Strategies and Potential Action	Risks	Mitigation Measures
Limited utilization of NTFP	Utilization of non-timber forest products. Increase in NTFP Production.	Over-extraction of NTFP if unregulated.	Finalizing of a Code of Practice for major NTFP and integrate the monitoring of NTFP extraction in a greater way into GFC forest monitoring and resources planning and management functions.
Limited utilization of environmental services	Expanding multiple uses of the forest (good and services) for economic activities and income generation, including exploring the generation of environmental services benefits.	Lack of knowledge and previous experience in Environmental Services utilization and PES may lead to challenges in targeting benefits and managing such facilities.	A comprehensive and participatory programme will enable active involvement of stakeholders thereby facilitating knowledge sharing and experience/capacity building in the areas.
Full potential of added value forest activities not realized	Exploring and developing added value forest production and manufacturing	An increase in added value activity may not necessarily decrease the pressure on the forest as growth in demand for added value products may result in equal or greater levels of extraction.	Strict quota regulation and monitoring of extraction of forest produce despite end use application. Advise communities on options to add value,
Forest gaps created in some cases following natural resources utilization	Reforestation of forest gaps	The introduction of invasive species.	Strict forest resources management and monitoring of species introduced.
Decrease in forest stocking in some cases	Engaging communities in forest rehabilitation activities including and enrichment planting	The introduction of invasive species.	Strict forest resources management and monitoring of species introduced.
Limited resource availability in GGMC & EPA	Enhanced enforcement of compliance by miners and mining companies with GGMC & EPA requirement of reforestation on closure of mined out areas	Possible prohibitive cost of reforestation may discourage potential investors.	The Government can provide technical guidance and support in reforestation activities.
Limited resource availability and capacity in mining sector	Stronger compliance by and improved capacity of miners of mining regulations.	Production may be decrease which may impact on employment and income generation.	Allowing for effective sustainable environmental planning at the initial stages so that any cost or production implication and be provided for at the

			outset.
Agriculture Practices in cases not done in a sustainable way.	Extension work is being done with operators.	Communities lack capacity to implement new methods.	Close collaboration and planning with the Ministry of Agriculture, Ministry of Amerindian Affairs and the key natural resources agencies, along with the EPA.
Road, Agricultural, Urban & Infrastructural Development	Improved land use planning & coordination amongst agencies	Development activities may lead to conflicts in land uses in some areas	Closer collaboration amongst RS, GFC, GL&SC, MoA, MoPW&C, MoH, GGMC
Unsustainable Logging Practices in some cases	Training in RIL; enforcement of GFC's COP	Inadequate implementation of legal requirements	Stronger enforcement & monitoring by the GFC as well as increased training by FTCl
Poverty & sustainable forestry not generating enough income to be an incentive to preserving forests	Development of Alternative Economic Opportunities (AEO) that would be appropriate & suitable for the respective communities	Communities may not sustain these activities in the long term	Support and capacity building for community members to develop and maintain the respective AEOs selected
Lack of security on land tenure, user rights are disincentives to land & user rights	Improvements in policies to address land tenure & user rights issues. Advancement of process of titling of new and extension areas.	Creation of discrimination between titled and untitled Amerindian communities	Closer collaboration of RS with MoAA. Advancing the land titling process.
Lack of benefits sharing systems for REDD practices	Consultations with stakeholders to develop an appropriate benefits sharing system	Local communities may lack the capacity to properly manage direct flows of income	Support and capacity building for community members

*** Note that all activities will be continuous to ensure that their implementation is sustained**

Guyana's REDD Strategy will not be limited to the above mentioned outline but will include continuous monitoring and also other strategies as well as consultations.

In the course of the preparation phase, the candidate activities will be discussed with stakeholders and those deemed relevant will be piloted on a small scale. These pilots will be accompanied with relevant studies, study tours and workshops to provide necessary training and experience.

Who will lead and coordinate the design and organization of the REDD-Strategy:

The Guyana Forestry Commission, the REDD Secretariat, in consultation and cooperation with other Government and non-Governmental stakeholders.

How the REDD strategy will be developed, what elements will be analyzed and what stakeholders will be involved:

Activities relating to baseline development and monitoring are discussed in further detail in Components 7 and 8. They are commencing immediately, and will progress, subject to resources, over the first year of the project. Annex 3 a-d details Terms of Reference relative to these. Other activities will be scheduled as per the table below, to lead to completion of the REDD strategy within a 3 year period.

Studies will include verifiability and independent monitoring, economic analysis of alternative land uses and drivers of deforestation.

Stakeholder liaison and workshops with other government institutions is already ongoing and will develop further as the

strategy unfolds. The demonstration initiatives provided for in the strategy will provide a concrete context for engagement with other stakeholders such as timber companies, conservation and other NGOs, indigenous community groups, as well as informing and updating the general public through the media and GFC website.

REDD will be incorporated into the overall development of the country through the following ways:

1. into the national forest policy via the Guyana Forestry Commission which is the forest policy making body of Guyana
2. into the Low Carbon Development Strategy (LCDS) which serves to transform Guyana's economy whilst combating climate change.
3. into national climate policy via the Climate Unit of the Office of the President which is the principal climate policy making body of Guyana
4. In keeping with one of the main goals of Guyana's Poverty Reduction Strategy (PRSP), (i) sustained economic expansion within the context of a deepening participatory democracy

REDD will be incorporated into both the national climate change agenda as well as the national forest policies to ensure that there is a holistic approach to its implementation, rather than a fragmented one. This will be accomplished through collaboration and coordination by all parties involved.

Budget, Schedule and Sequencing of activities:

The table below shows the proposed schedule of activities.

Readiness Preparation Proposal Components	Year 1	Year 2	Year 3
1. Develop REDD Candidate Activities			
2. Conduct specific studies, workshops and study tours, including trade off analysis.			
3. Attain overall feedback from consultations in the context of the Consultation Plan.			
4. Design Pilot or demonstration Projects			
5. Evaluate Pilot Projects			

Responsible Agency: RS & GFC

Indicators of Performance:

1. Draft list of replicable, applicable, appropriate list of equitable REDD activities
2. Design of Demonstration projects
3. Studies & study tours
4. Analysis of trade-offs

Budget

The total cost for this Component is US\$2,556,000 of which US\$689,000 is being requested from FCPF.

Component 4: REDD Implementation Framework

Objectives for this component:

The general objective is to develop institutional frameworks and capacity for liaison on land use in the context of REDD, for carbon monitoring and reporting to be included within impact assessments and cost-benefit studies, and to access forest carbon financing schemes and equitable benefits sharing mechanisms.

Expected Outcome:

The expected outcome is that REDD-based and voluntary sector carbon valuations will be incorporated into land use policies and decisions, and development and investment project impact assessments across all sectors, with the necessary institutional mechanisms created or adapted to enable and ensure this process.

National REDD Strategy & International Conventions

The national REDD Strategy and Methodology to be implemented will be done in keeping with the goals of the United Nations Framework Convention on Climate Change (UNFCCC); the 2006 IPCC Guidelines for National Greenhouse Gas Inventories as well as the United Nations Declaration on the Rights of Indigenous Peoples (DRIP). The Declaration emphasizes the rights of indigenous peoples to maintain and strengthen their own institutions, cultures and traditions and to pursue their development in keeping with their own needs and aspirations. It also prohibits discrimination against indigenous peoples and promotes their full and effective participation in all matters that concern them, and their right to remain distinct and to pursue their own visions of economic and social development. Consequently the principle of free, prior and informed consent will guide the process.

Lessons will be drawn from project initiatives that are coordinated through relevant international discussions at ITTO, UNFCCC, CBD and other fora.

Activities:

Specific activities proposed are:

- (i) Develop, implement and strengthen capacity building plan for implementing agencies as well as other government agencies on issues related to climate change and forest carbon
- (ii) Collaborate with Government agencies working to clarify land tenure arrangements
- (iii) Review and clarify carbon ownership across different tenure and management options

- (iv) Implementation of national and project-based carbon accounting and registry capabilities
- (v) Creation of transparent benefits sharing arrangements for targeted financial incentives for REDD
- (vi) Establish and develop a communication link with other countries to enable the sharing of ideas and lessons learnt

Benefits sharing will be addressed as part of the activities under the RPP following an inclusive process and following commencement of the project. It is therefore identified as a vital part of the RPP activities.

The Benefits sharing system will be dependent, amongst other factors, upon the following:

- a) The price of carbon – it cannot be predicted as to what it will be two or four years from now.
- b) Carbon stocks within various forest types- some forests types store more carbon than others. Studies will have to be done to determine the carbon stocks.
- c) The amount of carbon emissions avoided due to alternative land uses must be determined.
- d) The need to meet beneficiaries directly
- e) The need to improve livelihoods sustainably
- f) Development of a system that is transparent and accountable
- g) Development of a system that promote equitable distribution of benefits
- h) The system developed must respect traditional social structures and reaches vulnerable groups.

This System will be designed as part of the readiness preparation process.

Engaging Stakeholders

Full participation in REDD activities by the local population will necessitate a significant commitment of time and resources both from the national and community perspectives.

The RPP takes cognizance of these requirements and will implement a strategy that allows for a balanced approach to all components of the RPP implementation, including capacity building exercises. In this way, capacity building activities at the local level will be coordinated and structured to accommodate this challenge.

The approach taken in RPP implementation will be one whereby communities will be given a choice on whether or not and when they get engaged in readiness activities. The Proposal recognizes that various communities will be at various levels of readiness.

Constraints

1. Various natural resources are governed by separate legislation. Whilst these pieces of legislation effectively address the respective natural resource use, in some cases there is need for greater cohesion in implementation to allow for integrated natural resource usage.
2. There is no single regulatory body for natural resources management; as such various agencies are responsible for separate land uses, i.e., GFC for forestry, GGMC for mining and GL&SC for agriculture within state forests. In some cases this had led to constraints in coordinating multiple uses of natural resources.

3. The relevant readiness mechanisms that are lacking include:

- A baseline for forest carbon stock
- Titling of existing untitled Amerindian communities
- An assessment of deforestation and forest degradation
- A Monitoring, Reporting & Verification System
- An outline of REDD strategies
- A benefits sharing system

Owing to the absence of these mechanisms, natural resources agencies have not been able to previously plan and implement REDD activities. The Proposal aims to address this challenge.

Institutions in charge of implementing REDD are described in Component 2, including GFC, RCOC, MoAA etc.

What role would forest dwellers and indigenous peoples play?

Indigenous people and forest dwellers have an important and direct role to play in ensuring their benefits are secured. They will also continue to be exposed to various aspects of sustainable forest management and other uses of the forest that will be REDD friendly. They will also part take in:

- Discussions so as to ensure equity in the distribution of REDD benefits, secure land rights and promoted REDD as a positive contributor to poverty alleviation as well as the design of alternative economic opportunities.
- Providing local knowledge of the forest and its past uses.
- Training & Forest Policy
- Field based technical work, data collection & monitoring
- Information sharing & Dissemination

To date, Amerindian communities have been involved in:

- in the establishment of NBMPs;
- monitoring the areas in and around the plots to ensure that there are no disturbances to the plots through illegal logging or mining or other activities;
- data collection with the GFC/RS field teams;
- monitoring or and collection of data from weather stations set up by the GFC/RS to collect weather data within NBMPs.

The GFC/RS considers forest dependent groups as integral in the collection of data as well as in selection of areas suitable for the development of National Biomass Monitoring Plots (NBMP). The GFC/RS foresees the forest dependent groups as important to the successful implementation of REDD in Guyana.

REDD & Future Forest Activities

With the implementation of REDD activities, it is expected that mining, forestry and agricultural activities will be allowed to continue in accordance with existing laws and guidelines which govern their practices. It may be required for revisions to

be done to existing laws and procedures where these are required to further aid sustainable management. There will be continued and increased stringent monitoring and enforcement of compliance of the operators by the respective regulatory bodies.

Projects that are currently going through the permitting (as in the case of existing forest concessions and mining leases) process will continue. However, they must adhere to national requirements under current laws and environmental management procedures.

With regards to hunting and farming as well as other subsistence level activities by Indigenous peoples and other forest dependent groups, these will be unaffected. This is already allowed for under the current legislative structure which provides for continued utilization of forestry resources for subsistence use (as opposed to commercial level utilization) by indigenous communities.

Collaboration with Local & International Partners

In order for Guyana to attain readiness there must be collaboration with local and international organizations and agencies. These bodies will provide the technical expertise and funding that is essential to helping Guyana build the capacity needed to implement REDD strategies successfully.

The Government of Guyana is working through other donors through specific project related and bilateral donors to acquire other funding for the RPP implementation. At the present the GoG is working with the Norwegian Government through a bilateral agreement to garner some support. This support, among other areas, will assist in the setting up of a MRVS as laid out in the RPP.

Several donors and international partners have expressed an interest in supporting Guyana's REDD preparation and related activities, including the World Bank, World Wildlife Fund (WWF), United Nations Development Program (UNDP), Inter-America Development Bank (IDB) and Conservation International (CI). Other institutions such as the FAO, IDB, the German Government, USA and the ITTO may be approached for possible technical assistance. Efforts are also underway to secure assistance from funds under Guyana's UNFCCC GEF-4 RAF.

Additionally, through the World Bank Country Assistance Strategy (CAS) for 2009-2012, the forest sector has been identified as one target area to benefit from an international development assistance (IDA) support. This is considering capacity for a Forest, Communities & Climate Change project that would strengthen the institutional capacity and support alternative economic opportunities while reducing the pressure on forest resources.

Together with these initiatives, the GFC is will submit a proposal to the ITTO Thematic Programme on REDDES (REDD & Enhancing Environmental Services in tropical forests) to secure finances for monitoring deforestation and degradation at the national and community levels. This support is specifically targeted to the areas of monitoring land cover and changes there in and to assess deforestation and degradation impacts and levels. This will add to the resources that are required for components 3, 4 and 8 of the RPP.

The GoG will continue to identify and target other donor possibilities to further support the RPP implementation, which may include WWF, GEF, UNDP, FAO, FIP, IDB, CI, KfW etc, along with seeking technical support from agencies such as Clinton Climate Initiative & McKinsey and Company. This assistance may be in the form of technical inputs to carry out forest monitoring and planning work involving remote sensing analyses and technical strengthening particularly for the REDD Secretariat and the GFC, to execute and manage the REDD program.

Outputs and lessons learnt from existing and previous donor support programmes were considered in the compilation of the RPP and has influenced the identification of REDD strategies and approaches, as one example, through the outputs of the US supported Guyana Trade & Investment Programme the targeted REDD strategy of increasing added value activity was informed.

Further the outputs of the Agriculture Diversification Programme has largely informed the targeted agroforestry initiative identified under the REDD strategy initiative. Additionally, the existing WWF supported programme with the GGMC targeted at capacity enhancement has informed the identification of the REDD strategies that address capacity building in the mining sector to facilitate greater enforcement.

The LCDS is a model that seeks to generate financial incentives for the continued and maintained sustainable utilization of forest resources and the resulting maintenance of the current low rates of deforestation and forest degradation. In a more direct way, the LCDS outlines for payments from a REDD mechanism to be the main source from 2020 onwards and in a transitional manner from period prior to 2020. The RPP is one aspect of this strategic model. Under this, the RPP will allow for an effective mechanism to be developed and implemented to monitor report and verify forest carbon stock under a forest carbon financing mechanism which is being proposed under the LCDS. It is, in a sense, the operational mechanism that will allow for financial incentives to be monitored, reported and verified and will result in an transparency and fiduciary oversight to be provided to the model of incentives payments as provided for under the LCDS.

Once these payments are provided, Guyana can protect its forest and simultaneously seek a development path that maximizes the growth of low-carbon economic sectors and minimizes deforestation and high-carbon economic activity.

This would lead to action in three areas that are essential to Guyana's future:

- Investing in low-carbon economic infrastructure
- Facilitating investment and employment in low-carbon economic sectors
- Generally enhancing the nation's human capital and creating new opportunities for forest-dependent and other indigenous communities.

Government Institutions Involved:

The partner organizations involved are the Guyana Forestry Commission (GFC) as the lead agency in REDD coordination, the REDD Secretariat, statutory bodies involved in land use planning matters including the Environmental Protection Agency (EPA), Ministry of Agriculture (MA), Guyana Lands and Surveys Commission (GLSC), Ministry of Local Government and Regional Development (MLGRD), Ministry of Amerindian Affairs (MAA), Guyana Geology and Mines

Commission (GGMC), and the Guyana Energy Agency (GEA). The Ministry of Finance and Bureau of Statistics will assist in the incorporation of carbon valuations into the national accounts and into published statistical data.

Summary of Agencies Responsible for REDD Implementation Framework

Activity	Responsible Agencies	Supporting Agencies	Legal Mandate of Responsible Agencies
Strengthening the GFC and other agencies including the National Climate Committee and Office of Climate Change	GFC/RS	GL&SC, GGMC, EPA	GFC- forest regulation & management RS- coordination of REDD activities
Develop and implement capacity building plan for government agencies on issues related to climate change and forest carbon	GFC/RS, Climate Unit (OP)	GL&SC, GGMC, EPA	GFC & RS Climate Unit- Office of the President- responsible for overseeing the formulation & implementation of the climate change agenda for Guyana, including the Low Carbon Development Strategy
Collaborate with government agencies working to clarify land tenure arrangements	GFC/RS & GL&SC	Ministry of Agriculture, GGMC, Ministry of Amerindian Affairs, Ministry of Housing & Water	GFC & RS GL&SC- Ensure that management of State and government lands is in accordance with legislation and Government policy;
Review and clarify carbon ownership across different tenure and management options	GFC/RS & Climate Unit (OP)	Ministry of Amerindian Affairs, GGMC, Ministry of Agriculture, GL&SC	GFC & RS Climate Unit- Office of the President- responsible for overseeing the formulation & implementation of the climate change agenda for Guyana, including the Low Carbon Development Strategy
Implementation of national and project-based carbon accounting and registry capabilities	GFC/RS	GGMC, GL&SC, MoAA, MOA and community stakeholders	GFC- forest regulation & management RS- coordination of REDD activities
Creation of transparent benefits sharing arrangements for targeted financial incentives for REDD	GFC/RS & Climate Unit (OP)	MoAA, Ministry of Finance & community stakeholders	GFC & RS Climate Unit- Office of the President- responsible for overseeing the formulation & implementation of the climate change agenda for Guyana, including the Low Carbon Development Strategy
Establish and develop a communication link with Panama and other countries to enable the sharing of ideas and lessons learnt	GFC/RS	Ministry of Foreign Affairs	GFC- forest regulation & management RS- coordination of REDD activities

Nationally Recognized REDD Bodies

In all cases, the recognized REDD bodies will be the Guyana Forestry Commission and the REDD Secretariat, working in collaboration with the National Climate Committee and under the oversight of the Climate Unit of the Office of the President.

Mechanism for the flow of Funds

All funds for the proposed RPP activities will be received by the GFC and expended by the GFC and RS. Costs incurred

by other agencies involved will be compensated by funds received from the FCPF. This will be done by the GFC.

System for in Government coordination

For Consultation & Outreach, mechanisms proposed in component 2 will apply – through the RCOC. For other components, including the MRVS, REDD Strategy and Reference Scenario, the GFC and RS and its partners identified in Component 2a, will execute coordination through the NCC and under the oversight of the Climate Unit of the Office of the President.

Systems for Engaging NGOs

NGOs will be engaged through the work of the RCOC. This is discussed in Section 2a, Pages 27-29. The RCOC will be the interface between the various communities nationally and the government. Further, through the REDD Consultation and Outreach Committee; there will be representation by NGOs.

Schedule and Sequencing of activities:

Governance and Financial Structure	Year 1	Year 2	Year 3
Strengthening the GFC and other agencies including the National Climate Committee and Office of Climate Change, including in the area of capacity building on issues relating to climate change and forest carbon.			
Collaborate with government agencies working to clarify land tenure arrangements			
Review and clarify carbon ownership across different tenure and management options			
Implementation of national and project-based carbon accounting and registry capabilities			
Creation of transparent benefits sharing arrangements for targeted financial incentives for REDD			
Establish and develop a communication link with other countries (as appropriate) to enable the sharing of ideas and lessons learnt			

Responsible Agency: RS & GFC

Indicators of Performance:

1. Evidence of securing Amerindian community land & user rights in a way that ensures equitable access to REDD benefits
2. Capacity building Plan to undertake REDD activities
3. Report on equitable benefits sharing options

Budget

The total estimated cost of this Component is \$977,000 (USD) of which the FCPF contribution will be \$175,000 (USD). Refer to Annex 6.

Component 5- Assess the Social and Environmental Impacts, and Potential Additional Benefits, Of Candidate REDD Strategy Activities

Objectives of Environmental and Social Assessment of Readiness Activities:

In designing an approach to readiness activities, a social and environmental assessment (SESA) is viewed as an integral aspect prior to implementation. This approach will utilize both participatory and analytical tools to integrate social and environmental aspects into the Proposal. The following approach will be taken in conducting the (SESA):

- Conducting an Environmental Baseline Study
- Conducting the Environmental & Social Assessment
- Producing an Environmental Impact Statement (EIS)

The activities in this component will serve to identify, avoid, and mitigate the potential negative environmental impacts associated with the implementation of REDD. They will serve to improve decision making, to ensure that project options under consideration are sound and sustainable, and that potentially affected people have been properly consulted.

The SESA will be coordinated by the REDD Secretariat. Budgetary allocation has been made to adequately allow for resources to be provided for the execution of activities. This will be coordinated through administrative support by the RS and with the technical inputs of relevant specialist (which may include social and environmental impact assessment experts). The GFC will make all required inputs in the execution of studies and importantly, in decision making regarding SESA activities.

The Environmental Baseline Study (EBS) aims to record the present quality of environment and socioeconomic status within the area of influence prior to project implementation. In keeping with the WB Safeguard Policies, the project will first be screened to establish the appropriate extent and type of ESA needs to be conducted. It will then establish suitable records of current environmental conditions to assess the potential effects of implementing the proposed REDD Strategy. Further, the information collected will form the baseline for which to monitor future changes. The physical, biological and socioeconomic components of the environment will be assessed.

The Environmental & Social Assessment (ESA) will identify and assess the impacts of implementation of the proposed Strategy on the environment and will consider the alternatives available, if any. Further it will also consider the mitigation measures that can be employed to offset these impacts. It will contain technical details on the impacts of implementation of the Strategy on the environment.

The Environmental Impact Statement is basically a summary of the EBS and the ESA. It will provide all relevant details on the project and its effects on the environment.

In conducting the EBS, the following activities are conducted:

- Review of local policies that govern forestry in Guyana as well as related policies on resource management and conservation. This will provide for an understanding of laws that govern these above mentioned issues as well as inform about land ownership within forested areas of Guyana. An understanding of these will provide for a more appropriately designed outreach and awareness programme as well as a more comprehensive approach to readiness activities. Consideration will also be given to relevant international government agreements. From this process, areas for future institutional strengthening and capacity building will be identified.
- Screening of all projects to determine the appropriate extent and type of ESA is conducted. Any project that has the potential to involve large scale conversion or degradation to critical forested areas or large-scale displacement of indigenous peoples will not be considered. A robust framework for screening and decision making established to facilitate this.
- Consultations and meeting with key stakeholders is integral activity to this process. This includes meeting with representatives of sector agencies such as the Guyana Lands & Surveys Commission (GLSC), the Guyana Geology & Mines Commission (GGMC) and the Ministry of Amerindian Affairs (MoAA). Further to this, consultation and outreach activities will be planned for communities throughout the country. Key NGOs will also be consulted. This will allow for stakeholders to be consulted with regarding all upcoming activities, the means by which they will be involved, the potential benefits, risks and opportunities that will arise from the projects and the importance of their feedback and involvement to the process. These consultations will be planned, incorporating the concept of free, prior and informed consent to engage the stakeholders. In meeting with the local communities, the REDD Secretariat & the RCOC aim to consult with communities through the use of such materials as presentations, informational brochures and training for members of the community that are interested in being part of the activities. Materials will be sent to communities before hand in order for there to be meaningful and informed discussions on the process. The main objective of these consultations would be to identify potential issues and main concerns of the communities and to discuss potential mitigation strategies. Through this process, a framework for future meaningful citizen engagement will be established.
- Assess the health of forests within the selected project areas. This will be done through the use of GFC records and by the use of GIS/Remote Sensing.

The analysis of environmental and social opportunities and risks, policies and institutions will be conducted concurrently with the consultation and participation of stakeholders. It is foreseen that these activities will feed into and develop- each other. It is expected that the analysis of environmental and social opportunities will lead to inputs into policies and institutional strengthening, while the consultation and participation of stakeholders will develop environmental and social management frameworks consistent with World Bank's Safe-Guards.

In conducting screening of project using laws of Guyana and WB Safeguards. The WB Safeguards are encapsulated in the WB's OP 4.00. The main areas that will be examined include:

Environmental Assessment

- To help ensure the environmental and social soundness and sustainability of investment projects. To support integration of environmental and social aspects of projects into the decision making process.

Natural Habitats

- To promote environmentally sustainable development by supporting the protection, conservation, maintenance, and rehabilitation of natural habitats and their functions.

Involuntary Resettlement

- To avoid or minimize involuntary resettlement and, where this is not feasible, to assist displaced persons in improving or at least restoring their livelihoods and standards of living in real terms relative to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.

Indigenous Peoples

- To design and implement projects in a way that fosters full respect for Indigenous Peoples' dignity, human rights, and cultural uniqueness and so that they: (a) receive culturally compatible social and economic benefits; and (b) do not suffer adverse effects during the development process.

Forests

- To realize the potential of forests to reduce poverty in a sustainable manner, integrate forests effectively into sustainable economic development, and protect the vital local and global environmental services and values of forests.

Consultations

While consultations will be an ongoing process throughout the process, they will be integral to the successful implementation of the SESA.

Stakeholder analysis: what are the potentially affected interests of various stakeholders?

Stakeholders cover all persons who will be affected, who have a direct role in executing REDD activities and other interested persons e.g. NGO's. The potentially affected interests may be:

- Land use, territorial claims, and land rights
- REDD activities and their effects on traditional livelihoods and culture; what are the alternatives
- Benefits sharing
- Requirement of monitoring and evaluation system
- Demonstration activities and the integration of these into community land use

It is intended that two initial planning workshops be held:

- Safeguards Policy Workshop – with an aim of discussing, sensitizing and clarifying issues as it relate to the WB safeguards.
- Participatory Stakeholders Analysis Workshop – with an aim of addressing the interest of rights holders, an assessment of how the process will negatively affect stakeholders, identification of champions and of those who have interest against the project.

As part of the assessment, the following will be examined, among other areas, with regard to each stakeholder group: baseline, influence, risk benefits, key interest, and level of involvement. The multi stakeholder workshop will involve

participants of academia, Government, Civil Society and the private sector, among others.

An important component of the consultation process will be the conducting of an analysis of the environmental and social context of REDD activities in Guyana. This Process will include activities such as:

- Workshop held with an aim of identifying benefits and benefits sharing mechanisms.
- Session held to establish baseline data: including current socio economic status, social and environmental baseline assessment, and the identification of the benefits that the process will enable.
- Session held to establish indicators of monitoring performance in terms of qualitative and quantitative data.
- Initial Social Analysis conducted including a Rapid Social Assessment and a detailed assessment as the Proposal advances. This will address, among other areas, social diversity and gender issues, institutions, rules and behaviour, stakeholders, participation, social risk and safeguard policies. Risk associated with the REDD Programme will be address on several fronts: external and internal environment risks, risk to the environment, country and people.

In identifying and analyzing risk mitigation activities, the following will be addressed: averting risk, reducing/minimizing risk, and compensate/mitigate.

Stakeholder Analysis Table

Ministry/Agency	Impacts		Influence		Risks/ Opportunities
	Positive	Negative	Positive	Negative	
Office of Climate Change, Office of the President	✓		✓		- a risk is that of REDD not being included in text after negotiations in Copenhagen, Denmark in December 2009
National Climate Committee	✓		✓		Opportunity for better coordination and increased scope of work for the NCC
Ministry of Agriculture	✓		✓		Opportunity to diversify base of economically viable agricultural activities
Ministry of Amerindian Affairs	✓		✓		- Greater outreach with communities. - Revenues received through REDD can fund titling activities - with the advent of the implementation of REDD, the Ministry will be under pressure to title more communities with limited resources available to the Ministry to carryout the process
Ministry of Finance	✓		✓		A risk is that the Ministry may not have adequate resources to monitor carbon financing programmes -opportunities for capacity building for the MoF
Guyana Forestry Commission.	✓		✓		Opportunities for institutional strengthening and capacity building in monitoring & enforcement as well as GIS /Remote Sensing
Guyana Geology and Mines	✓	✓	✓		- Opportunities for institutional

Commission					strengthening and capacity building in monitoring & enforcement as well as GIS /Remote Sensing - Land use conflicts arising
Guyana Lands and Surveys Commission	✓		✓		Opportunities for institutional strengthening as well as capacity building
National Parks Commission	✓		✓		
Environmental Protection Agency	✓		✓		
REDD Secretariat	✓		✓		Opportunity for improving interagency coordination as well as reaching out to Amerindian & forest dependent groups through consultations & the RCOC.
Hydrometeorological Service	✓				Opportunities for institutional strengthening as well as capacity building
University of Guyana	✓		✓		Opportunities in the areas of R&D as well as capacity building
Private Sector	✓	✓	✓	✓	- Opportunities to strengthen ties and working relationships with regulatory bodies - opportunity to get involved in REDD projects and benefit from funding - land use conflicts may arise - opportunities for training & capacity building in the areas of REDD, SFM & RIL
NGOs (International e.g. CI, WWF, IIED)	✓		✓		- opportunities to either assist in the development as well as to develop and implement REDD studies & pilot projects - opportunities to work with regulatory agencies to develop capacity of agencies -
NGOs (local e.g. APA, TAAMOG)	✓	✓	✓	✓	- opportunities to either assist in the development as well as to develop and implement REDD studies & pilot projects
Civil Society	✓	✓	✓	✓	- Opportunities to strengthen ties and working relationships with stakeholder bodies involved in REDD projects - opportunity to get involved in REDD projects and benefit from funding
Amerindian Communities & other forest dependent communities	✓	✓	✓	✓	- Opportunities arise from AEOs to move away from traditional logging & mining activities. - Risk: the capacities of these communities to sustain the AEOs
Untitled Amerindian Communities (including new Amerindian communities & communities that do not yet meet the criteria to be titled)		✓			- A risk is that these communities cannot formally be part of the decision making process, as they do not own the lands on which they reside - With the implementation of REDD and once revenues start to be generated, the rate of titling will increase. As this is considered as a major priority area for the GoG

Stakeholder analysis will be conducted by RCOC on which government representatives, NGOs and indigenous peoples are stakeholders. This will address benefits, risks and feedback and results dissemination as detailed in Component 2b. This stakeholder analysis will be conducted through several rounds of consultation, working group sessions and discussions with stakeholders.

What role would forest dwellers and indigenous peoples play?

Indigenous people and forest dwellers have an important and direct role to play in ensuring their benefits are secured. They will also continue to be exposed to various aspects of sustainable forest management and other uses of the forest that will be REDD friendly. They will also part take in:

- In discussions so as to ensure equity in the distribution of REDD benefits, secure land rights and promoted REDD as a positive contributor to poverty alleviation as well as the design of alternative economic opportunities.
- Providing local knowledge of the forest and its past uses.
- Training & Forest Policy
- Field based technical work, data collection & monitoring
- Information sharing & Dissemination

Within the SESA, the following will be done:

- Assessment of the impacts of REDD strategy activities on environment. This will consider impacts, both negative and positive of the proposed activities on the social, biological and economic environment. The assessment will consider the magnitude and importance of impacts in terms of long, medium and short term impacts as well as whether these impacts will be temporary or permanent. Further, these will be classified into being reversible or irreversible.
- Analysis of the compatibility of the proposed activity with the existing land uses in and around the selected project areas. This will consider future developments, existing uses of the forest, cultural/ historical resources, indigenous peoples and traditional uses of the forest.
- Assess potential economic and social impacts caused by relocation or loss or shelter or involuntary restriction of access to legally designated parks and protected areas
- Consider alternatives to the project in the selected areas as well as the “business as usual” approach.
- Prepare recommendations/ measures to mitigate potential impacts of the proposed project activities as well as propose timelines for the implementation of these activities;

The EIS will be compiled from the information collected from the completion of the above mentioned activities.

OBJECTIVES OF ENVIRONMENTAL AND SOCIAL ASSESSMENT OF READINESS ACTIVITIES

The objectives are as follows:

- a) To review all policies & procedures that relate to forestry, land use, biodiversity conservation and natural resources management in Guyana;

- b) To assess the compatibility of the proposed land use with existing land use within selected project areas;
- c) To assess the impacts, long and short term, direct and indirect within the selected project areas;
- d) To consult with and inform all stakeholders involved about the project;
- e) To assess the compatibility of the proposed project with other land uses within the proposed project areas.
- f) To ensure that all activities are conducted in conformation with the WB Safeguard Policies on Environmental Assessment, Forests, Natural Habitats, Indigenous Peoples and Involuntary Resettlement

Expected Outcome:

It is expected that the Environment and Social Assessment will provide a holistic assessment of the current local circumstances, based on reviewing local policies, procedures and guidelines as well as through consultations, and provide useful and appropriate recommendations on the way forward for the implementation of the proposed REDD activities. The Assessment will allow for planners to pinpoint areas of capacity building as well as to strengthen the outreach & awareness aspect.

More specifically, it is also expected that the following will be prepared:

- o Consultation & Outreach Plan
- o Environmental & Social Management Plan

The main results of these will be:

- Analysis with corresponding recommendations in terms of policy reform.
- Establishment of robust framework for screening projects and for decision making which takes into account WB Safeguards.
- Establishment of robust framework, this would document risks and opportunities, for future meaningful citizen engagement.
- Future institutional strengthening started.

Methods to be used to achieve outcome:

To achieve this outcome, the methods that will be used are as follows:

- o Reviewing existing data
- o Consultations and interviews
- o Biological, physical, and socio economic surveys within project areas

Activities :

- o Screening of all projects to determine to scale of the project and the extent of the ESA to be done
- o Review of local policies that govern forestry in Guyana
- o Meeting with all stakeholders
- o Assess the health of forests within the selected project areas.
- o Assess the impacts of REDD strategy activities on environment.
- o Analysis of the compatibility of the proposed activity with the existing land uses in and around the selected project

areas.

- Develop a Monitoring & Verification Plan for project areas.
- Prepare recommendations/ measures to mitigate potential impacts of the proposed project activities
- Information dissemination
- Consultation & Participation

Budget, Schedule and Sequencing of activities:

Activities	Year 1	Year 2	Year 3
Analysis of social and environmental context of benefits, social assessment, risks and opportunities that will be presented through the implementation of REDD			
Development of screening criteria to consider scale and impact of potential projects as well as timelines for the preparation and submission of the various aspects of the SESA.			
Review of local policies that govern forestry in Guyana as well as related policies on resource management and conservation.			
Conduct consultations with all relevant stakeholder groups, especially indigenous communities and forest dependent groups.			
Planning of workshops relevant to the SESA in the areas of World Bank Social Safeguards and Participatory Stakeholder Analysis.			
Analysis of the compatibility of the proposed activity with the existing land uses in and around the selected project areas.			
Consider alternatives to the project in the selected areas as well as the "business as usual" approach.			
Prepare recommendations/ measures to mitigate potential impacts of the proposed project activities as well as propose timelines for the implementation of these activities;			
Ensure that all activities conducted in the ESA are in conformance with the Laws of Guyana and WB Safeguards Policies on Environmental Assessment, Forests, Natural Habitats, Indigenous Peoples and Involuntary Resettlement			

Responsible Agency: RS & GFC

Indicators of Performance

1. Complete initial analytical work & consultations
2. Framework for screening of projects developed (in conformance with OP 4.00)
3. Full participatory stakeholder analysis
4. Environmental Baseline Study & ESIA

Budget

The estimated cost of this component is \$504,000 (USD) with the FCPF contributing \$243,000 (USD). Refer to Annex 6.

Component 6: Assess investment and capacity building requirements

The GoG and GFC recognize that over the next three years more investment and capacity building will be necessary to enable Guyana to gain the maximum benefit from any post-Kyoto REDD scheme. Guyana will seek to learn from the experiences of other countries that are preparing for this initiative and will work closely with local and international organizations to facilitate the smooth and successful transition to a state of 'readiness'.

Objectives for this component:

This component aims to:

- Assess the GFC's, EPA's, other government agencies' and relevant authorities', and stakeholders' and communities' (including indigenous communities), current capacities.
- Identify capacity building activities that will enable Guyana to implement its REDD Strategy.
- Estimate the financial resources required to carry out capacity building, training and development of institutional capabilities.
- Identify potential sources of funding and organizations/institutions that will be able to provide the technical assistance necessary to help Guyana in her efforts to implement REDD strategies.
- Develop a timeline for the implementation of these activities to ensure Guyana achieves 'readiness' by 2012.

Expected Outcome:

In its concerted efforts to achieve readiness, Guyana will work with relevant agencies, stakeholders and other partners to ensure that within three years, the basic capacities and institutional capabilities to implement REDD strategies will be developed. More specifically, capacity building will be a long term, continued effort that is not expected to be completed within the next three (3) years. Preparation plans will aim to create basic capacity needed to:

1. coordinate REDD efforts in the country, including effective consultations with communities and the development of a benefits sharing system (as detailed in Components 2, 3 & 4)
2. monitor GHG emissions compared to the baseline scenario (as detailed in Component 8)

By 2012, Guyana would have in place a readiness package that outlines necessary capacity required to engage in a REDD compensation system. In reaching this outcome Guyana expects to:

- Develop the institutional capacity of government agencies so that they are sufficiently able to implement REDD strategies. A necessary outcome is for the REDD Secretariat and the GFC, to have the tools and capacities

required to monitor deforestation, forest degradation and assess carbon stocks on a continual basis. It is expected that this will be done over the next three (3) years, during the execution of the RPP.

- Establish a MRVS for the tracking of GHG emissions and carbon stock changes from land use and management on a continuous basis.
- Form partnerships with local and international organizations, communities and other stakeholders for the ongoing provision of technical assistance and training to enable local agencies/authorities to implement REDD strategies effectively
- Execute capacity building programmes to help forest dwellers including Amerindians engage in sustainable; forest management activities

Activities:

In order to achieve the expected outcomes, a variety of activities will be conducted over the next three years of Readiness Preparation:

- Conduct Investment assessment and develop capacity building plan for national and community level needs to engage in REDD activities.
- The promotion, training and education on the interpretation and implementation of SFM guidelines to national level and community stakeholders. The Forests Bill (passed in January, 2009) provides 'clear and secure rights' and allows for communities to 'manage and benefit from their local forests...'. The REDD Secretariat will consult with forest-dependent Amerindians and other forest dwellers with regards to the design and execution of capacity building and training. Amerindian communities, relevant local and international NGOs or experts will be consulted with to ensure that these programs/projects respect Amerindian rights under the Amerindian Act, the UN Declaration on the Rights of Indigenous Peoples and other international human rights agreements and declarations.
- Effective monitoring of State Forests is essential to reduce illegal activities and unsustainable practices that contribute to deforestation. The ability of the GFC, EPA and GGMC to monitor all activities taking place in the forests of Guyana must be assessed to determine the investments that will be needed to execute this task effectively. Staff in these sectors will have to be trained in remote sensing techniques and their monitoring divisions must have access to current satellite images of the highest quality necessary to accurately identify illegal activities. In addition to remote sensing, there is also the need to enhance on the ground monitoring capacity through improvements in transportation. The necessary framework to improve this collaboration will also be determined.
- Execute training programmes through the Forestry Training Centre Inc. (FTCI), targeted at building capacity for

sustainable forest management for operators and communities. FTCl will also have to consider adapting training in reduced impact logging (RIL), exploring the option of certification as well as the promotion of the use of NTFP.

- Develop a programme to target investment and capacity building need of communities to reduce deforestation and forest degradation. Assist Amerindian communities in the development of alternative economic activities whilst respecting their rights as indigenous peoples to preserve their traditions and culture.
- Develop a training and education programme for miners on REDD as well as sustainable use of forest resources for mining.
- Develop programme to promote the use of more sustainable agricultural practices in order to minimize the effect of the effects of agriculture on the forest resources, as well as to promote the use of more efficient technologies.
- New infrastructural development across the country has implications for Guyana's forests. A capacity building and support plan needs to be developed to promote a better understanding of REDD & implications of infrastructural development on REDD as well as to promote better planning oversight and implementation of projects.
- Establish accountable benefits sharing mechanisms to ensure that incentives go to the right people

The Table below, outlines the link between Strategies, Capacity Building needs and Indicators of Success

STRATEGY	CAPACITY BUILDING REQUIREMENT	INDICATOR (S) OF SUCCESS	TENTATIVE DURATION
Conduct Investment assessment and develop capacity building plan for national and community level needs to engage in REDD activities.	Develop the institutional capacity of Government agencies and local communities to ensure that they are sufficiently able to plan, execute and monitor REDD strategies.	<ul style="list-style-type: none"> - Investment Assessment report completed - Capacity building plan developed 	12 months
The promotion, training and education on the interpretation and implementation of SFM guidelines to national level and community stakeholders, including Amerindian communities.	To train stakeholders in SFM and thereby promote the REDD agenda	<ul style="list-style-type: none"> - Capacity building sessions held in 10 Administrative Regions of Guyana - Maintenance of a high standard of forest management practices by loggers 	36 months
Effective monitoring of State Forests to reduce illegal activities and unsustainable practices activities that contribute to deforestation.	<ul style="list-style-type: none"> -To strengthen the verification of legality of origin of forest produce -To increase the use of GIS in forest monitoring -To improve the efficiency in the 	<ul style="list-style-type: none"> - Maintenance of a high level of legality of forest harvesting, and trade. - Maintenance of low rates of deforestation and forest degradation - Increased and improved usage 	24 months

	use of GFC's tagging system	of GIS for monitoring	
RIL training by the Forestry Training Centre Inc (FTCI) to be extended.	To improve the logging practices used by communities and other commercial harvesters as well as to build awareness of REDD	- Capacity building sessions held in 10 administrative regions - # of person & communities trained in SFM practices	24 months
Develop a training and education programme for miners on REDD and sustainable use of forest resources for mining.	Develop the capacity of the mining sector to improve mining practices and reduce forest degradation & deforestation	- Capacity building sessions held in 10 administrative regions	12 months
Programme to promote more REDD & sustainable agricultural practices & efficient technologies	To improve agricultural practices and reduce its impacts on the forest sector		36 months
Capacity building and support plan for infrastructural development & REDD	Plan developed to promote a better understanding of REDD which is expected to lead to better M&E		36 months
Establish accountable funding/benefits sharing mechanisms to ensure that incentives go to the right people	To ensure that a system of benefit sharing is developed that satisfies the needs of both the GoG and the communities involved	Mechanism developed for benefits sharing	24 months

Budget, Schedule and Sequencing of activities:

Activities	Year 1	Year 2	Year 3
Conduct Investment assessment and develop capacity building plan for national and community level needs to engage in REDD activities.			
The promotion, training and education on the interpretation and implementation of laws and SFM guidelines to national level and community stakeholders.			
Effective monitoring of State Forests to reduce illegal activities and unsustainable practices activities that contribute to deforestation.			
Execute training programmes through the Forestry Training Centre Inc. targeted at building capacity for sustainable forest management for operators and communities.			
Develop programme to target investment and capacity building need of communities to reduce deforestation and forest degradation.			
Establish accountable funding/benefits sharing mechanisms to ensure that incentives go to the right people.			

Responsible Agency: RS & GFC

Indicators of performance for this objective:

1. Investment Assessment report & Capacity Building Plan completed
2. Capacity building and consultation sessions held in the Administrative Regions of Guyana
3. Mechanism developed for benefits sharing
4. Information packages prepared and disseminated and to communities.

Budget

The estimated cost of this component is \$636,000 (USD) of which the FCPF will contribute \$271,000 (USD). Refer to Annex 6 (Budget)

Component 7: Develop a Reference Scenario

Objectives for this component:

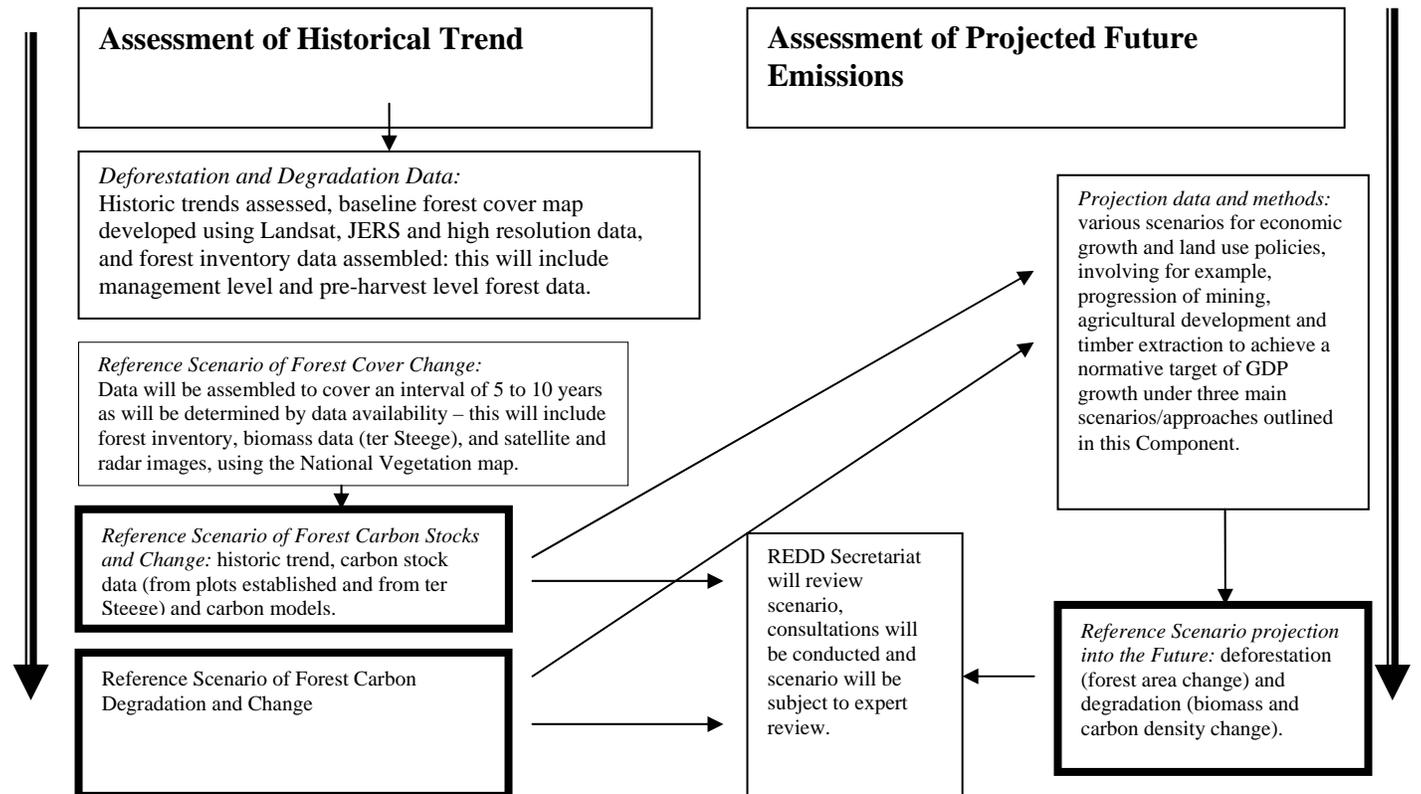
The reference scenario will be developed following the Inter-governmental Panel on Climate Change Good Practice Guidelines (IPCC GPGs) and will establish the historic emissions level and projected emissions level, using both field data and remote sensing data. Approaches for creating projections are defined in this Component.

Expected Outcome:

There are two main outcomes: the establishing of the historic emissions level and secondly, the development of the projected emissions level based on three approaches.

Reference Scenario Framework

The Framework which will be used is outlined as follows, and has informed the Activities set out to achieve the outcome:



Definition of Forests:

The definition of Forest for Guyana is outlined in the Forest Act 2009, that was passed by Parliament on 22 January 2009, and is awaiting the assent of the President:

- (a) “forest” – means an ecosystem dominated by woody plants, consisting of –
 - (i) closed forest formations, where trees of various stories and undergrowth cover a high proportion of the ground; or
 - (ii) open forest with a continuous vegetation cover in which tree crown cover exceeds 10 percent; and
- (b) includes –
 - (i) mangrove forests and any wetlands or open lands within a forest which form an integral part of the ecosystem;
 - (ii) forest produce in the ecosystem; and
 - (iii) biological, soil, and water resources of the ecosystem;

Part I: Assessment of Historic Trend

Guyana has assessed the international policy discussions on REDD and reference emissions scenario. This is summarised below⁴:

- For REDD the reference emissions scenario under discussion is a national-level trend based on or projected from historical trends in emissions from forest change. These trends would be measured over multiple years (5–10) in order to reduce the impact of anomalous years.
- The reference period selected will likely be finalized through negotiations, but a more recent reference period (in the last 5–10 years) may better reflect current land-use trends and be most feasible given constraints in available data.
- Because financial compensation would be based on verifiable emission reductions from deforestation and forest degradation, a credible method for measurement is absolutely essential. Historical reference trends should have the following characteristics:

Accuracy and precision. All reasonable efforts should be made to ensure that estimated changes in forest cover and greenhouse gas fluxes closely reflect what is happening on the ground. The measurement error or uncertainty need to be quantified to determine how much confidence can be placed in REDD credits. Uncertainty is unavoidable and will vary by country. The uncertainty could be used to qualify the REDD values—a discounting or grading system could adjust the values for REDD credits accordingly.

Comprehensiveness. The reference scenario should cover all relevant activities. For deforestation, all significant sources of deforestation in a country must be represented by the data used to develop the reference scenario estimate. If degradation is to be included, then the data need to have high enough resolution to quantify the amount of area

degraded.

Environmental integrity. For the REDD system to work in favor of climate protection, it must ensure that the corresponding greenhouse gas reductions are real. Given the various forms of uncertainty described herein, prudence suggests that reference scenarios be set conservatively (not too high) as a safeguard against rewarding too much REDD credit and diminishing global greenhouse gas mitigation efforts.

Transparency. Minimum standards of transparency will aid in the verification and ensure fairness and integrity of the REDD system; this includes documentation of data and methods and making them available to third parties.

Flexibility. A wide range of circumstances—including differences in data availability, dominant type of land use, terrain, and the capacity to incorporate remote sensing methods—will apply across and within countries affecting their ability to estimate reference scenarios. A REDD system will need to be flexible in allowing and accounting for variability in methodologies and accuracy.

Feasibility. The proposed approaches for estimating reference scenarios must be possible with a reasonable level of effort and expense or else they will simply not be done well or done at all. Feasibility factors include data availability, analytical capabilities, cost of data collection and analysis, and institutional support for these efforts.

Compatible. The proposed methods to estimate deforestation and forest degradation must be compatible with methods used to estimate forest carbon stocks. Definitions of deforestation and forest degradation must also be measurable using available data and methods.

Time Period of data for estimating historic emissions:

This R-PP proposes for the historic emission baseline to be established using data from 1950. The justification for doing this and not using a 5 or 10 years period, which would have seemingly be more practical, is owing to the fact that the most comprehensive aerial and forest inventory data dates to 1950. From that period onwards, there were samples taken in various districts of Guyana in forest inventory. To start from 1990 for example, would exclude the utilization of the two most comprehensive data sets at the national level and would affect the completeness and accuracy of the baseline. It is the view that by using the complete data sets of the 1950, with the data sets of years following on management level inventory along with the recent remote sensing imagery analyses, a strong baseline will be developed for data points of intervals 5 to 10 years. The final determination of the length of the interval will be defined as one of the initial activities of the process. The reason for selection of this time interval (especially opening the possibility of a 10 year interval although recognizing that 5 years will be better), is because during 5 year intervals, all requisite data to enable a single complete assessment will not be possible, given the existing nature of historic data on remote sensing and national forest inventory.

For the projected future emission, a period of 5 years will be used as the interval.

Existing Data

- 1950 forest inventory and aerial photographic interpretation databank, national vegetation map, LANDSAT images for entire land cover over period 2005 to 2009. Selected swaths from Formosat, ALOS, CBERS and Aster image providers.
- Timber Extraction Data from 1990 to present.
- Forest areas allocation data from 1990 to present.
- Macro economic and social data: GDP, employment, growth rates, inflation, per capita income levels, production by GDP economic activity areas (mining, agriculture, manufacturing, etc), housing statistics, population, etc.
- Forest Inventory data from national inventory of 1950, and areas specific inventory of 1970, 1990 and 2000 to present at management level (sampling at 2% to 5%) and preharvest level (100% inventory of selected species).
- 45 biomass permanent sampling plots established with data currently being collected and collated.

The quality, specifically in terms of accuracy and consistency of all of the above data, are medium to high in accuracy. Number 1 is high in completeness with regards to 1950 forest inventory, API and LANDSAT coverage.

New Data

- Biomass field estimates across carbon pools collected from permanent biomass monitoring plots currently being established and that will be established. 900 to 1,000 such plots are proposed to be established as part of this readiness process. These plots are fully defined in Component 8.
- Additional Remote Sensing coverage for future periods.

The following options will be considered and assessed:

Sensor	Resolution (m)	Approx Area Covered (km)	Application
MODIS	250	Guyana	Countrywide monitoring
Landsat	30	185 x 185	Large area detection & monitoring
Landsat			
DMC ⁵	32	660 x 4100	Large area detection & monitoring
CBERS	20	113 x 113	Large area detection & monitoring
IRS	1 to 40	Varies	All monitoring levels
Palsar radar	5 to 25	70 x 70 ⁶	Large area detection & monitoring
ASTER	15	60 x 60	Hotspot monitoring
SPOT	2.5-20 m	60 x 60	Hotspot monitoring
ALOS	10	60 x 60	Hotspot monitoring
Formosat	8	60 x 60	Hotspot monitoring
QuickBird	4	16.5 x 16.5	Hotspot monitoring
IKONOS	2.2	11 x 11	Hotspot monitoring

**Hotspots refer to "sampling method" and Large area detection refer to "wall to wall method"*

- High resolution data sets from a provider that meets the requirements of Guyana: <10% cloud cover, 2m to 15m resolution with preferably 24km to 70km or more swath. (as smaller swaths can be costly to secure for total areas that may be required) To allow for greater accuracy, high resolution data and areial photographs will be needed to supplement medium resolution data.

4. Socio economic and macro economic data, for future periods, including projected GDP data, natural resources utilization: forestry, mining, agriculture, housing statistics, urban development, per capita income levels, population growth rates, etc. from relevant agencies.

Carbon Pools to be included

The Intergovernmental Panel for Climate Change (IPCC) in its technical reports, details standards for the calculation of forest biomass (IPCC, 2006). It is recognized that degradation fits within the IPCC GPG “forest remaining forests”. Of particular note is the definition of Tier 1-3 coefficients and expansion factors, and the various carbon pools to be considered (see Figure 1 below). It may be noted that for many carbon trading schemes, only above ground bole and crown biomass are normally considered (VCS, 2006; Merger, 2008) but the ultimate standards REDD will adopt are as yet unknown, and all carbon pools need to be allowed for, and their assessment is recommended in GOF-C-GOLD (2008). Tier 1 and 2 coefficients are those based on global or regional average data, accessible through the scientific literature. Specifically, FAO have provided a manual for forest biomass estimates (Brown, 1997) which includes a range of Tier 1 coefficients (global average coefficients) and some Tier 2 data. Ter Steege (2001) prepared a more detailed schedule of Tier 2 coefficients specifically for Guyana.

The field aspect of carbon storage assessment in monitoring plots will be specifically designed to measure biomass change in all the major carbon pools, covering all forest types in Guyana including high forest, scrub forest, savannah margins and woodland mosaics, montane forests.

Associated with this monitoring system will be data collection to establish coefficients and allometric functions for the major biomass pools: Tree boles, crowns and roots, lianas and epiphytes, understory shrubs and herbaceous plants, standing and fallen deadwood, litter and soil carbon.

Part II: Assessment of Projected Future Emissions

Approaches for projection of emissions, and rationale for selection

The approaches that are tentatively identified to be used are:

- Scenario 1 – Projection based on historic trend prior using the business as usual approach (without REDD)
- Scenario 2 – Projection based on undertaking a development plan to realise macroeconomic targets
- Scenario 3 – Projection based on undertaking a development plan implemented with Carbon financing mechanism in place (includes REDD)

The reason for this selection is to allow for the implications on emissions using the current trend projected into the future to be realised; secondly, to assess the implications on emissions for Guyana’s development goals to be realised; and thirdly to assess the implications for Guyana’s development plans with an effective carbon financing mechanism in place.

Activities to achieve outcome:

The list below gives a more detailed appraisal of those activities and further actions required for the development of a

reference scenario. These points are explained in more detail in the draft framework Terms of Reference (ToR) in Annex.

1. Assessment of data available on forest area, land cover change and carbon density.
2. Development of historical trend reference scenario for looking at land cover change, forest carbon density and deforestation and forest degradation.
3. Complete reference scenario modeling for: development plan, trends and macroeconomic trends forecasting following compilation of data on these areas.
4. Review by independent expert.

Partners and organizations involved:

GFC will lead and coordinate this component, using the services of specialist consultants, facilitate workshops and consultations, and provide all datasets relating to the forestry components. The Bureau of National Statistics will be the primary source for data required for non-forestry components. The Ministry of Finance will review and guide economic projections of GDP that will drive consumption components. Other relevant Ministries and agencies will be consulted as required to fill any gaps in data and confirm model assumptions.

Budget, Schedule and Sequencing of activities:

Schedule	Year 1	Year 2	Year 3
Assessment of data available on forest area, land cover change and carbon density.			
Development of historical trend reference scenario for looking at land cover change, forest carbon density and deforestation and forest degradation.			
Complete reference scenario modeling for: development plan, trends and macroeconomic trends forecasting following compilation of data on these areas.			
Review by independent expert.			

Responsible Agency: RS & GFC

Indicators of performance for this objective:

1. Data on forest area, land cover change and carbon density.
2. Historical reference scenario developed
3. Reference scenarios projection completed
4. Review completed by independent Expert

Budget

The total cost for this Component is US\$1,575,000 of which US\$513,000 is being requested from FCPF.

Component 8: Design and Implement Monitoring, Reporting, and Verification System for REDD

Objectives of this component:

The objective of the monitoring system is to provide annual, accurate estimates of changes in forest cover and degradation with national coverage by a transparent, objective and verifiable methodology. The reporting system provides comparisons between monitoring system output summaries and the reference scenario to provide net changes in carbon for REDD accounting. The verification system requires that all procedures and data sources are objective, well-documented, secure and verifiable, and are subject to such peer-review and external audit as may be determined necessary. The Reporting and Verification Systems will be outlined and developed more fully later in the preparation process.

Monitoring and Reporting System

Framework

There will be two main aspects of the monitoring and reporting system: field based assessments and remote sensing imagery analyses.

The International Panel for Climate Change (IPCC) in its technical reports details standards for the calculation of forest biomass (IPCC, 2006). Of particular note is the definition of Tier 1-3 coefficients and expansion factors, and the various carbon pools to be considered (see Figure 1 below). It may be noted that for many carbon trading schemes, only above ground bole and crown biomass are normally considered (VCS, 2006; Merger, 2008) but the ultimate standards REDD will adopt are as yet unknown, and all carbon pools need to be allowed for, and their assessment is recommended in GOFC-GOLD (2008). Tier 1 and 2 coefficients are those based on global or regional average data, accessible through the scientific literature. Specifically, FAO have provided a manual for forest biomass estimates (Brown, 1997) which includes a range of Tier 1 coefficients (global average coefficients) and some Tier 2 data. Ter Steege (2001) prepared a more detailed schedule of Tier 2 coefficients specifically for Guyana.

However, for the most accurate and complete results and credible estimates of carbon through biomass estimation, locally derived and current allometric equations and expansion factors are desirable. These are classed by IPCC (2006) as Tier 3 estimates. The present report describes the procedures which should be adopted under the REDD readiness programme to undertake this.

In the same way, monitoring systems may rely on Tier 1-3 estimates of inventory and growing stock. Tier 1 estimates would use rule-of-thumb figures for tropical forest volumes; Tier 2 would be based on regional or outdated inventories, whilst Tier 3 implies a current biomass-oriented national forest inventory. The best estimates currently available for Guyana of total forest biomass are those of ter Steege(2001), which are Tier 2 in this respect, being based on relatively old inventory data (1970-72) to determine mean stockings by forest type, together with Tier 2 biomass coefficients.

Requirements of Framework

The proposed monitoring system therefore has to be based on Tier 3 coefficients and data in all respects.

It must be sufficiently sensitive to detect relatively low incidences of deforestation and degradation, as is believed to be the case in Guyana at present. Accordingly, the following components will be needed for implementation of the system.

- A network of permanent plots, specifically designed to measure biomass change in all the major carbon pools, covering all forest types in Guyana including high forest, scrub forest, savannah margins and woodland mosaics, montane forests. Focus will be made on the main carbon pools which change has been identified as occurring. Areas that have been identified as undergoing greater change will be subject to more intense sampling.
- Coefficients and allometric equations relating tree biomass components and necromass pools (deadwood, litter, soil carbon) to easily measured variables such as tree diameter. These models need to be developed as an integral part of setting up the monitoring system through appropriate destructive sampling.
- A remote sensing and GIS framework to determine through ground truthing with the biomass plots and supervised classification an appropriate algorithm to map forest type areas and sensitively monitor pixels for

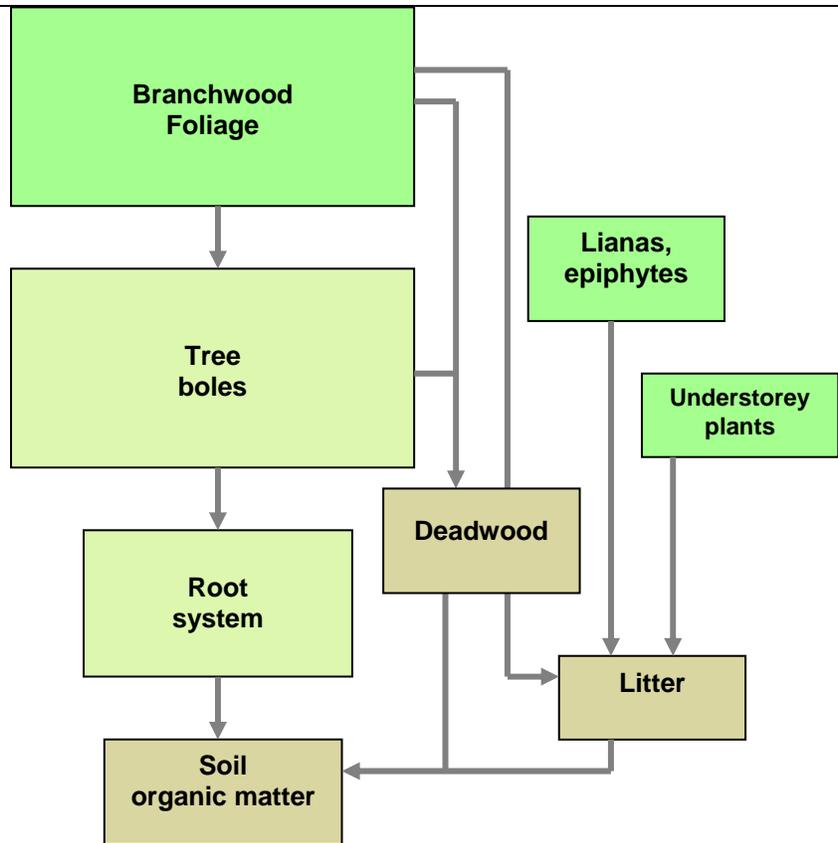


Figure 1 : Carbon pools for forest monitoring

About 85% of ecosystem biomass for tropical high forest is in the tree component (boles, crown and roots - Brown, 1997). Arrows show direction of carbon fluxes.

forest cover or type change.

- Integration of the whole into an information system that will routinely provide all necessary reports for REDD forest biomass and cover change monitoring.

Field Based Analysis

Plot Establishment for Biomass Monitoring for Computation of Forest Carbon Storage Potential

Under the Carbon Stock Assessment Project which is currently being undertaken by the GFC, a National Forest Biomass Monitoring System in Guyana has been proposed for establishment. It aims for the following:

A system of permanent monitoring plots is proposed to measure and detect changes in forest biomass. The plots will be circular, of 18 m radius (0.1 ha) with an inner subplot of 8 m radius (0.02 ha). Trees over 20 cm dbh will be measured on the main plot, and over 5 cm dbh on the subplot. Plots will be organized in clusters of 5, based on a cross design with a central plot, and four plots on 100 m arms at right angles. Clusters will themselves be organised into transects of 3 clusters in a line, one km apart.

It is proposed that 900 plots, grouped as 180 clusters and 60 transects be established nationally in all major forest types. This will include non-productive Muri and Dakama scrub forests, and sensitive savannah-hill forest mosaics, as these constitute important areas for biomass sequestration and potential forest loss, in addition to the sampling of productive forest.

Associated with this monitoring system will be data collection to establish coefficients and allometric functions for the major biomass pools: Tree boles, crowns and roots, lianas and epiphytes, understory shrubs and herbaceous plants, standing and fallen deadwood, litter and soil carbon.

This work will comprise two types of sampling units. Associated with monitoring plots will be 4 temporary 3 x 3 m quadrats which will be destructively sampled by weight for fallen deadwood, litter, and small plant biomass. Soil samples will be taken for organic carbon determination. These measurements will provide data that can be correlated with scores for deadwood and litter depth on the monitoring plots to derive biomass estimates for these carbon pools.

A second type of sample will be the detailed measurement of felled trees and tree roots to establish a data set of 300 plus sample trees for crown, bole and root biomass. Tree root excavations will be facilitated in cooperation with mining communities using hydraulic hoses. These data will allow the elaboration of local and current Tier 3 allometric functions for Guyana.

The plots, coefficients and allometric functions will give biomass estimates, together with conventional forestry data on volume, species, forest and soil type, that are tightly geo-referenced and sampled over scales of 0.1 ha, 4 ha (clusters) and 2 km (transects). These will be used to supervise classification of landsat imagery to determine areas and area changes of biomass and forest type cover classes. From this the monitoring system will be able to directly report carbon stocks and fluxes for REDD accounting. This is the primary objective of the system. Its secondary objective is

to provide a system of continuous national forest inventory providing strategic information on timber volumes and increments, NTFPs, biodiversity and other ecosystem services.

The National Biomass Monitoring System (NBMS) is intended to provide data for REDD project assessments of current forest biomass, and forest biomass change over time in response to REDD-oriented government policies relating to forestry and land use planning.

Satellite remote sensing

Suitable satellite imagery

In optical wavelengths (visible to near infra-red), LANDSAT imagery has been recommended by most sources as most suitable for monitoring purposes. The GOF-C-GOLD(2008) sourcebook tabulates various platforms with availability and cost and concludes “*In summary, LANDSAT-type data around years 1990, 2000 and 2005 will most suitable to assess historical rates and patterns of deforestation.*” (op.cit, p19). Pöyry (2008) have provided a detailed report to GFC on the use of SRS to monitor logging activities, and provide detailed algorithms and procedures based on LANDSAT imagery, which they similarly conclude provides the best current option based on cost, coverage availability over Guyana, and resolution.

LANDSAT has a resolution of 30 m. This is sufficient to register logging roads and log landings, as well as clearings for farms, powerlines, roads, housing, etc. It is affected by cloud cover, like any optical sensor, but the frequency of imagery means that selection of cloud free coverage has not proven to be an insurmountable problem.

However, other optical platforms offer different scale resolutions and may have strengths in appropriate contexts. CBERS, designed primarily for Brazil’s needs, has a resolution of around 250 m, giving a more synoptic level of classification than LANDSAT. It also has sensors at higher resolutions, down to 20 m. Alternatively, IKONOS resolves to 5 m, giving fine detail over smaller area, but is prohibitively expensive to use at Guyana’s national scale.

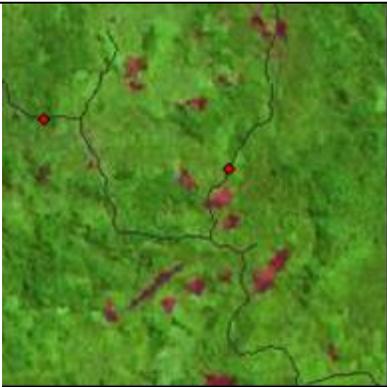
In the microwave spectrum, radar imagery is effective in providing synoptic coverage and distinguishing broad biomass classes. Radar imagery has the advantage of not being inhibited by cloud cover, but interpretation beyond simple cover classes is difficult, as there is nothing equivalent to the differential spectral band responses that are available from optical sensors. JERS radar imagery was used as the basis for the Guyana 2001 National Vegetation Map, in combination with a variety of other sources. JERS is no longer functional, but the more advanced ALOS satellite with its PALSAR sensor provides a replacement. However, access to this imagery is much less open than LANDSAT, and is probably restricted to specific project arrangements.

Detection of Forest Disturbance

Successful detection of forest disturbance and roading activities are related to both image quality and the type and interpretation of changes.

The Landsat dataset assembled provides a broad overview of change. Overall the data should be viewed as answering the question “Where are the changes occurring?” A rule of thumb for the relation of the pixel size and the map scale is 0.05 up to 0.1mm pixel size in the map scale (meaning 30 m resolution) equals an equivalent map scale of 1: 300 000. This scale is suitable for high level detection and provides an excellent base layer for targeting and mobilising resources.

By way of example, the same natural forest area is used (Mindanao, Phillipines) to show how the level of detail increases, moving from recognition where uncertainty still exists as to the boundary and cause of the land use change (as in Phase I) to identification where the boundary is more certain (Phase II dataset). From the left are examples of interpretation levels using Landsat ETM+ (30 m), 2.5 m SPOT data.

	Photo	Image Phase 1	Image Phase 2
Highly degraded			
	Recognition	Identification	

Edges and gaps are better defined as the spatial resolution increases. Also, different spectral band combinations enhance certain features; i.e. red areas on Landsat and IKONOS identify recent harvesting activity.

Practical Indicators of Change

Using medium resolution data like Landsat (30 m resolution) then temporal changes ≥ 1 ha should be detected if the activity is a clear-cut or mining. Smaller or lower intensity activities may be detected but will be difficult to confirm with certainty. In these cases local knowledge, forest inspection or higher resolution will reduce this uncertainty.

Following the wall to wall cover at medium resolution, high resolution image analyses, to detect change at levels lower than 1 hectare, will be utilized and analysed. These data sets include Formosat, Spot, Ikonos, and ALOS, etc. This can be done for identified 'hot spots' or for larger areas depending on cost and logistics factors (including cloud cover in the case of optical images)

Roading activities are also possible to detect. Skid tracks are often constructed off of existing road or river networks, so it is import to maintain an accurate GIS base map of existing roads to ensure new tracks are detected.

Several spectral bands are well suited for enhancing spectral characteristics associated with roading and harvesting activities. A three band image composite comprising green, near infrared and shortwave infrared provides the best contrast.

A series of examples that show road construction and the different land clearing operations identified from the Landsat satellite data follow.

Road Detection:

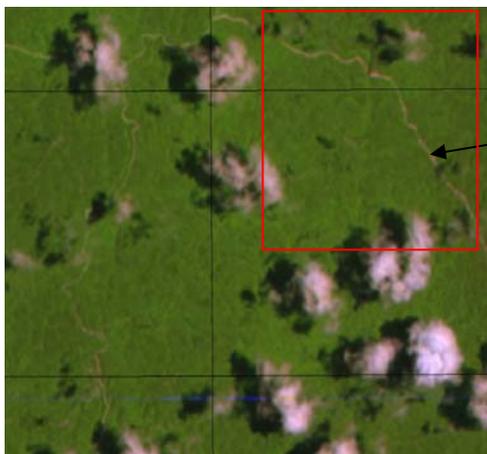
New road appearing between 2005 and 2008 is shown below for Guyana.

2005 image



No road

2008 image



New road

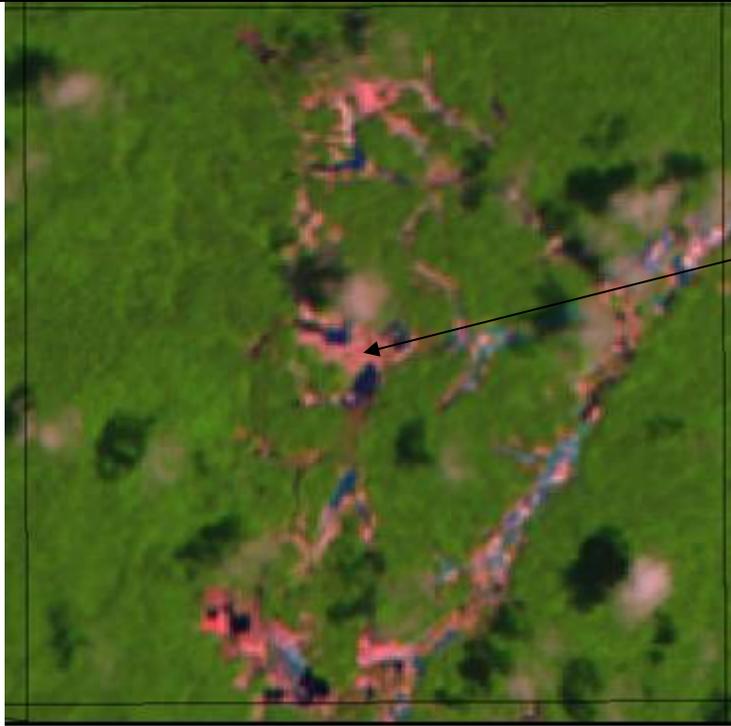
Forest Clearing

Recent forest clearing will look red in colour (bare soil) in Guyana.



Mining

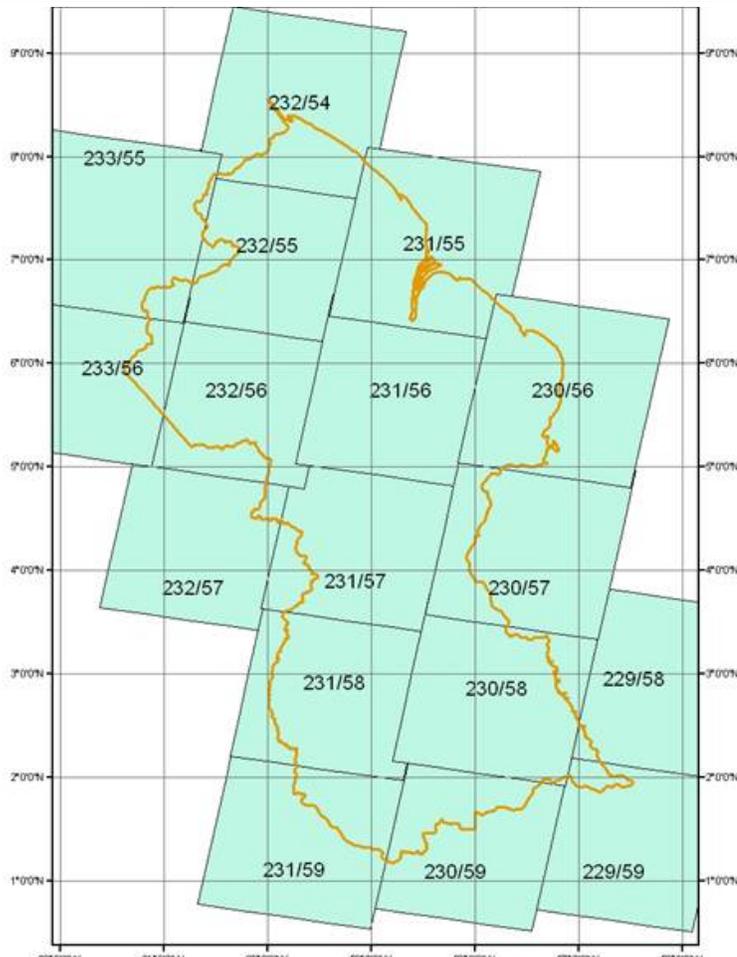
Mining activities will look red/grey or blue in colour. Activities will often be located close to rivers and streams. Blue areas depict water, and red bare soil.



Mining activity

Datasets and Analysis A temporal coverage spanning two time periods 2005 and 2006-2008 has been provided for Guyana. This is a total of 34 Landsat scenes (17 for each time period).

Figure 1: Landsat Coverage over Guyana



Results

Extension and Geography of Deforested and Degraded Forest Areas

A total of 54, 210 ha of degraded forest area and 2626 km of forest roads were mapped during the period 2007-2008, as shown in Map 1 below. Of this total, it is estimated that approximately 34, 044 ha of degraded forests are found within the State Forest Estate (SFE). Total State Forest Area is 13.8 million hectares while total forest cover is 18.6M million hectares. Based on this Quick Assessment, the rate of deforestation in the SFE is 0.25% while the rate in Guyana forest cover is 0.29%.

Mining seems to be the single most major cause of degradation within the SFE. Approximately 24, 428 ha of forests was cleared due to mining activities and another 21, 903 ha of forests was cleared for agriculture. The most degraded forests areas are found in the North-West region of the country, which is traditionally known to have the highest concentration of mining concessions.

Up to 2008, the total extension of forest roads was 2,626 km, with 2,329 km alone found within the SFE. The occurrence of roads is significant in the central and north-west regions of Guyana. About 80% of official forest roads are concentrated in these areas, particularly in the large concession lease areas.

Analysis of the satellite images show that while the deforestation rate of Guyana is significantly low as compared to

other countries with high forest cover, mining seems to be the most prominent cause of deforestation. This supports the current understanding that the deforestation rate of Guyana is extremely low which can be attributed largely to the sound management practices and effective monitoring by the Guyana Forestry Commission.

This project was done at the national level and has direct potential to be sustainable in the future.

Reporting

Reporting in the national carbon monitoring system will be done for historic and future monitoring purposes. This involves the use of reference scenarios that will be set in Component 7. Specifically, reporting will be done in the following key areas: forest area change assessment, changes in carbon stocks and results of verification and uncertainty assessment.

Reporting activities will follow the main principles outlined below:

- Data will be **archived** and documented
- Elaborations will be done on pool **definition**, and definitions relevant to determining the extent of the managed land included in the inventory, together with evidence that these definitions have been applied consistently over time.
- **Documentation** will be done for demonstrating completeness, consistency of time series data and methods for interpolating between samples and methods for interpolating between samples and years, and for recalculating, and avoidance of double counting as well as for performing QA/QC.
- **Emission factors:** Sources of the emission factors that were used (specific IPCC default values or otherwise) will be quoted.
- **Activity data:** Sources of all activity data, such as areas, soil types and characteristics and vegetation covers, used in the calculations, will be provided.
- **Results of model simulations:** In the case of data output being used from models in estimation procedures, the rationale for model selection and use, will be provided.
- **Analysis of emissions:** Significant fluctuations in emissions between years will be explained.

Inventory Quality Assurance/Quality Control - (QA/QC)

Quality control checks will be executed through Quality Assurance (QA) and Quality Control (QC) procedures, and expert review of the emission estimates. This will be supplemented with the general QA/QC related to data processing, handling, and reporting and documenting, with source-specific category procedures as outlined by IPCC GPGs.

Verification

External audits will be conducted for all aspects of the MRVS. All components of the MRVS are expected to be in compliance with the Good Practice Guidelines (GPG). This compliance will be strictly enforced. The MRVS will be reviewed by an external expert party.

Verification will be done in keeping with IPCC Guidelines and recommended approaches for good practice. IPCC outlines a number of approaches to verification, including: comparison of the inventory estimates with independent assessments, procedures and datasets; peer and public review; and direct measurement of emissions and removals of greenhouse gases. Verification approaches used may also include examination of specific aspects of the inventory, such as underlying data (collection, transcription, and analysis), emission factors, activity data, assumptions and rules used for the calculations (suitability and application of methods, including models), and up-scaling procedures. Verification will be conducted using data and methods that are independent from those used to prepare the inventory.

Expected Outcome:

The systems will provide national maps of forest cover change, forest logging extent, authorised and unauthorised land use changes such as mining, agriculture, occurrence of forest fires, and any other event that impacts on forest area and quality. These will be supported by corresponding tables of forest area and quality by Guyana regions, with comparisons to the reference scenario, and net changes in sequestered carbon.

Supporting these outputs will be manuals of procedure and archived documents, satellite imagery, field forms, databases, as well as a network of sample plots on the ground all subject to audit inspection or as needed for verification purposes.

Activities to achieve outcome:

The following activities will be undertaken during the development phase of the monitoring system:

- I. Development of a software tool to routinely process and compare LANDSAT images and produce vectorised maps and tables of forest cover and cover change.
- II. Establishment of a network of permanent biomass monitoring plots, together with data systems and procedures and a cadre of trained measurement staff.
- III. Field work and analysis to refine biomass allometric models and functions and provide as far as possible IPCC Tier 3 functions for all Guyana biomass and carbon models.
- iv. Linkages and modifications to the GFC Production database, GEMFORM forest planning database, and forest plan maps so that forestry activities (areas, volumes logged, carbon impacts) are automatically summarised and reported within the system
- v. Consultations and liaison with other agencies involved in use of satellite imagery and land use planning to agree best practice and exchange technical information.
- vi. International study tours and training to acquire best practice in satellite image interpretation and biomass monitoring.
- vii. Stakeholder consultations and workshops, to build consensus and understanding of the system and obtain

feedback relative to its development.

- viii. Conduct uncertainty analysis on monitoring results generated by the system.
- ix. Documentation and peer-review of procedures and systems to the standard required for verification.

The following further activities would continue routinely once the system is operational:

- x. Annual acquisition and processing of LANDSAT or other required remote sensing coverages.
- xi. Annual remeasurement of a subset of the biomass plots – approximately 1/5 would be measured each year, but plots in areas showing cover or land use changes would also be measured.
- xii. Linkage to GFC Production and Forest Plans (GEMFORM) data to update forest operation areas and extraction volumes.
- xiii. Running of the integrated software to produce all maps and output tables required, including net changes in sequestered carbon considering forest growth, harvesting, degradation, deforestation and reforestation and their submission via the REDD Secretariat.
- xiv. Facilitate external audits as required, responding to CARs and recommendations through appropriate actions.

As part of the Framework terms of reference to support the development of a Monitoring, Reporting and Verification System, the following conditions will be added:

- a) Outline recommendations for whether these can be incorporated into current MRV methodology and relevant implications (resource).
- b) Based on recommendations, decisions will be taken at the National level.

Based on the findings of these activities, the recommendations made will be considered for implementation.

Monitoring the social impact of REDD will include feedback from communities and other stakeholders on land area change which will feed into the reporting and verification aspects.

Partners and organizations involved:

GFC and the REDD Secretariat will be responsible for developmental and operational phases of the monitoring system, in consultation with other government agencies as required. Local communities would be involved in maintenance of monitoring plots.

Dissemination of Information

Through the various mechanisms outlined under Component 2, all information will be disseminated.

Budget, Schedule and Sequencing of activities:

The table below shows activity i-viii sequencing in the development phase. Once operational, activities ix-xii would be done annually, with periodic audits (activity xiii) as dictated by FCPF. Dotted lines show intermittent activities over a

period, solid lines are continuous until completed.

Develop Monitoring System	Development phase												Operational phase			
	Year 1				Year 2				Year 3				Year 4+			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
i <i>Develop RS image processing application</i>	→															
ii <i>Establish network of biomass plots</i>					→				→							
iii <i>Field sampling for Tier 3 allometric carbon models</i>	→				→											
iv <i>Linkages to GFC FMIS (Production, GEMFORM)</i>					→				→							
v <i>Inter-agency consultations on methodologies</i>	→															
vi <i>International study tours and training</i>	→				→											
vii <i>Stakeholder consultations and workshops</i>	→				→				→							
viii <i>System Manual of Procedures and Documentation</i>					→				→							
ix <i>Annual acquisition of satellite imagery</i>	→				→				→				→			
x <i>Annual re-measurements of subset of plots</i>					→				→				→			
xi <i>Data acquisition/reconciliation with GFC FMIS</i>					→				→				→			
xii <i>Software run to generate monitoring report</i>	→				→				→				→			
xiii <i>Verification audits</i>					→				→				→			

Responsible Agency: RS & GFC

Indicators of performance for this objective:

Indicators of performance would be:

1. Number of biomass plots established, measured, data processed and validated.
2. Coverage of satellite imagery acquired and synthesized to annual cloud-free rectified image.
3. Integrated forest monitoring software application completed and output tables generated.
4. Documentation and verification completed, including peer review.

Budget

The total cost for this Component is US\$2,327,000 of which US\$1,181,000 is being requested from FCPF.

Component 9: Design a System of Management, Implementation, and Evaluation of Readiness Preparation Activities

The REDD Secretariat will coordinate the preparation of monitoring and progress reports according to the requirements of FCPF. All activity centres will submit monthly or quarterly (as appropriate) and annual reports, which will form the basis for compilation of quarterly and annual programme reports.

Component	Deliverable
<i>Component 1</i> - Land use, forest policy and governance quick assessment	<ol style="list-style-type: none"> 1. Continued assessment and more detailed monitoring of the drivers of deforestation
<p><i>Component 2</i> - Management of Readiness</p> <p>Convene a national REDD working group to coordinate REDD activities, and how REDD will be integrated into the existing land use policy dialogue</p> <p>Prepare a REDD Consultation and Outreach Plan</p>	<p>(2a)</p> <ol style="list-style-type: none"> 1. Meeting reports of the RS & RCOC 2. Technical progress reports 3. Communications Strategy 4. Consultation Reports <p>(2b)</p> <ol style="list-style-type: none"> 1. Reports from consultations (based on communities' inputs & feedback) 2. RCOC reports 3. Incorporation of relevant and applicable aspects of feedback into RPP 4. Development of an effective conflict resolution protocol
<i>Component 3</i> - Design the REDD strategy	<ol style="list-style-type: none"> 1. Draft list of replicable, applicable, appropriate list of equitable REDD activities 2. Studies & study tours 3. Analysis of trade-offs 4. Reports from workshops, studies & study tours
<i>Component 4</i> - REDD Implementation Framework	<ol style="list-style-type: none"> 1. Evidence of securing Amerindian community land & user rights in a way that ensures equitable access to REDD benefits 2. Capacity building Plan to undertake REDD activities 3. Report on equitable benefits sharing options

<p><i>Component 5 - Assess the social and environmental impacts, and potential additional benefits, of candidate REDD strategy activities</i></p>	<ol style="list-style-type: none"> 1. Complete initial analytical work & consultations 2. Framework for screening of projects developed (in conformance with OP 4.00) 3. Full participatory stakeholder analysis 4. Environmental Baseline Study & ESIA
<p><i>Component 6 - Assess investment and capacity building requirements</i></p>	<ol style="list-style-type: none"> 1. Investment Assessment report & Capacity Building Plan completed 2. Capacity building and consultation sessions held in the Administrative Regions of Guyana 3. Mechanism developed for benefits sharing 4. Information packages prepared and disseminated and to communities.
<p><i>Component 7 - Develop a Reference Scenario</i></p>	<ol style="list-style-type: none"> 1. Data on forest area, land cover change and carbon density. 2. Historical reference scenario developed 3. Reference scenarios projection completed 4. Review completed by independent Expert
<p><i>Component 8 - Design and Implement Monitoring, Reporting, and Verification System for REDD</i></p>	<ol style="list-style-type: none"> 1. Number of biomass plots established, measured, data processed and validated. 2. Coverage of satellite imagery acquired and synthesized to annual cloud-free rectified image. 3. Integrated forest monitoring software application completed and output tables generated. 4. Documentation and verification completed, including peer review.

Budget

The estimated budget for this component is \$760,000 (USD), of which the FCPF is expected to contribute \$35,000 (USD). Refer to Annex 6 (Budget).