Forest Carbon Partnership Facility (FCPF)
Readiness Plan Idea Note (R-PIN) Template

February 20, 2008

Republic of Guyana
The Forest Carbon Partnership Facility (FCPF)
Readiness Plan Idea Note (R-PIN)

Guyana's President Jagdeo has expressed a willingness to deploy the country's rainforest, the size of England, in the long-term service of the world's battle against climate change. Guyana is building institutional capacity to establish REDD components in all forest programs including forest conservation, sustainable forest management, and community-driven activities to maintain Guyana's comparatively low deforestation rate. Guyana is not asking to be compensated for good past forest stewardship, rather to receive incentives through a market-based mechanism to compensate for continuing low historical emissions from deforestation during the next 50 years when avoiding dangerous climate change is most important. Guyana's national circumstances are similar to many other countries that have historical low emissions from deforestation and that provide stewardship over 18% of the world's tropical forest carbon. Guyana intends to lead global innovations and develop new methodologies that may be used by partner countries with similar circumstances.

"In devising these solutions, we need to shun timidity and be bold in what we seek to achieve. Every day that we fail to act on avoiding tropical deforestation makes the achievement of overall climate change goals more difficult, and puts at risk the lives and livelihoods of millions in every part of the world." His Excellency President Jagdeo, Republic of Guyana

Country submitting the R-PIN:	**Republic of Guyana**
Date submitted:	**30th May, 2008 (Revised Document submitted on 31-7-2008)**

1. General description:

Honorable Robert Persaud, MBA, MP	**Mr. James Singh**
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b) List authors of and contributors to the R-PIN, and their organizations:

James Singh, Commissioner of Forests, Shyam Nokta, Chairman of the National Climate Committee, Andrew Bishop, Commissioner of Guyana Lands and Survey Commission, Gitanjali Chandarpal, Coordinator ,National Climate Unit, Pradeepa Bholanath, Project Coordinator, Guyana Forestry Commission, Mr. Benjamin Vitale, Conservation International, Dr. David Singh, Director General, Conservation International, Guyana, Dr. Marc Steininger, Conservation International, Celia Harvey, Conservation International. In addition, the Government of Guyana held several stakeholder consultations inclusive of indigenous communities to inform them of the R-PIN preparation and solicit their views. This feedback was incorporated in the preparation of the R-PIN submitted to the World Bank.

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c) Who were consulted in the process of R-PIN preparation, and their affiliation?

Navin Chandarpal, Presidential Adviser on Sustainable Development, James Singh, Commissioner of Forests, Shyam Nokta, Chairman of the National Climate Committee, Andrew Bishop, Commissioner of Guyana Lands and Survey Commission, Gitanjali Chandarpal, National Climate Unit, Pradeepa Bholanath, Project Coordinator, Guyana Forestry Commission, Mr. Benjamin Vitale, Conservation International, Dr. David Singh, Director General, Conservation International, Guyana, Dr. Marc Steininger, Conservation International, Celia Harvey, Conservation International. As indicated in b) above, several consultations were also held with various stakeholder groups countrywide, inclusive of the indigenous communities.

Key Government entities with responsibility for natural resources and environmental management were involved in the consultation process and the preparation of the R-PIN and will also be actively engaged in the implementation phase. Other entities involved in the R-PIN preparation process include the Natural Resources and Environment Advisory Committee (NREAC) and Cabinet Sub Committee on Natural Resources which will be involved in implementation as well.

2. Which institutions are responsible in your country for:

Guyana has the political will and government institutions in place to make rapid progress on REDD planning and implementation.

The institutions in place to implement a national-level REDD program are the Guyana Forestry Commission (GFC) (forestry planning and management including monitoring, enforcement), The Environmental Protection Agency (EPA) (biodiversity conservation and management), Ministry of Agriculture (MA) (planning and coordination), Guyana Lands and Surveys Commission (GLSC) (land use planning), Ministry of Local Government and Regional Development (MLGRD), Ministry of Amerindian Affairs (MAA) (local indigenous community land titling and development) Guyana Geology and Mines Commission (GGMC), and the Guyana Energy Agency (GEA).

Guyana established a National Climate Committee with representatives from multiple government agencies, NGOs, and the private sector. This Committee has a reporting responsibility to Government and the Parliament of Guyana. Within the Ministry of Agriculture, the National Climate Unit is the implementing entity for the Committee and manages and coordinates day to day climate change procedures.

With sufficient funding and technical support, these agencies will be tasked with preparing the relevant guidelines, and working with stakeholders through a process of outreach and extension visits to develop a REDD Readiness Plan specific to Guyana's goals and circumstances. Particular attention will be paid to understanding alternative means of employment and benefits sharing throughout many levels in Guyana.

3. Current country situation:

a) Where do forest deforestation and forest degradation occur in your country, and how extensive are they?

The strategic value of conserving Guyana's forests cannot be overstated. Today, nature's technology deployed in our forests, can be enlisted in the fight against climate change. Guyana's pristine forest covers over **85% of the country**, contains well over $5GtCO_2$ in above ground biomass, and is estimated between 18.416 million hectares (WRI) and 18.695 million hectares (UN FAO). The great majority of Guyana's forests are suitable for timber extraction and currently over 50% of the forest is allocated to some form of production.

Guyana lies in the heart of the Guiana Shield, which comprises Southern Venezuela, Guyana, Suriname, French Guiana, and Northern Brazil's Amapa and Para States. The region provides a unique opportunity to support climate stability, conserve biodiversity, protect intact freshwater systems and contribute to economic development through the establishment of region-wide efforts that contribute significantly towards reducing greenhouse gas emissions from deforestation and degradation (REDD). A low-carbon economy that is built on REDD will provide resources for the people of the region to conserve and manage vast amounts of tropical forest carbon in protected areas, sustainably managed areas, and indigenous lands, whilst ensuring positive economic and social transformation. This type of new economy leverages the valuable global contribution these forests make to stabilizing the Earth's climate. These opportunities converge in the Guiana Shield because the area exhibits one of the highest percentages of primary forest cover (over 90% of the region is intact tropical rainforest), the highest tropical forest cover per capita in the world, whilst having one of the lowest per capita incomes in the Western Hemisphere.

b) Are there any estimates of greenhouse or carbon dioxide emissions from deforestation and forest degradation in your country?

The relatively low deforestation rate in Guyana is 0.1% to 0.3% (UN FAO FRA 2005, Colchester 1999).
Using a baseline forest area of approximately 18.5 million hectares (FAO 2005), 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 logging until further studies on the biomass of forests before and after logging are conducted.

Guyana's historical rates of deforestation are relatively low as is the case for many other tropical countries. Logging rates have been moderate, compared to some of its neighbors. 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 perfect example of the need to include REDD activities in a country with historically low rates and emissions. This is 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;
3) There is a growing international demand for tropical timber and a strong presence of international logging companies in Guyana;
4) 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;
5) Brazil has a very large and dynamic human population that could rapidly move into Guyana for both logging and agricultural activities;
6) 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.

Guyana's low historical deforestation and degradation emissions do not accurately predict immediate expected future higher emissions because the majority of Guyana's State Forest Estate is suitable for logging and has been allocated for exploitation. (See Annex 1 for more details)

Guyana's reference scenario will include modeling of these probable future projected emissions. REDD Readiness funding will produce maps of deforestation and degradation patterns, and the modeling will be based on both spatial (e.g. land-use allocations, infrastructure improvements, population, and demographic data) and non-spatial (e.g. sustainable forestry policy enforcement effects, economic development plans) data inputs and assumptions used to estimate likely land-use change.

It is proposed that a combination of tools such as those in the Intergovernmental Panel on Climate Change (IPCC) 2003 Land Use Land Use Change Forestry (LULUCF) Guidance, and the IPCC 2006 Guidelines, will be used, in addition to other appropriate methodologies such as that included in the GOFC-GOLD[1] Source Book on REDD. It is also recognized that operational programs to assess change in forest area are robust and ongoing, and Guyana notes also the Brazilian 'PRODES' program as a model to move forward. Also, a national accounting, reporting and assessment system would be established in order to ensure a measurable, reportable and verifiable mitigation action through REDD. However, in order to initiate implementation of such systems, strong support for capacity building, technology transfer and financial resources will be needed.

Investments in Guyana today to guarantee a deforestation rate substantially below the global average, can avoid emissions now at a reasonable cost. Therefore, Guyana should be the global example to apply a new methodology for countries that have relatively low historical deforestation and degradation rates.

c) Please describe what data are available for estimating deforestation and/or forest degradation.

Annex 1 contains the allocation of the State Forest Estate of Guyana (13.7 million hectares) as recorded by the Guyana Forestry Commission (GFC). This summary indicates that approximately 50% of Guyana's State Forest Estate has been allocated to sustainable utilization even though only a small fraction has actually been disturbed. Approximately 39% of the State Forest is unallocated and consists mainly of primary forest lands. The areas allocated to sustainable utilization are based on a rotation system with at least 30-40% of allocated concessions still consisting of primary forests. Overall, the entire State Forest Estate, including those areas allocated for research and reserve sites, is rich in commercial timber species and all areas are very suitable for production purposes. The total size of titled Amerindian land is 2,406,190 hectares.

The regional forest inventory was originally completed in the 1970s. In addition, the Guyana Forestry Commission (GFC) has archived a large amount of inventory data which is provided at the 2% Management Level inventory, and at a 100% inventory for commercial species. Two areas of the country, Mabura and Pibiri, have several permanent sampling plots (PSP's) that were established for research purposes. The Iwokrama Reserve has recently also established PSP's that include measurement of carbon fluxes. However other regions must still establish PSP's. Comprehensive estimates of Guyana's forest biomass were completed by Hans ter Steege (2001) and Brown (1997) who estimate average forest biomass and resulting above ground carbon between 225 and 550 tCO2 per hectare.

In the context of remote sensing of forest cover and change, Guyana is a notoriously cloudy country. This requires duplicate satellite images of the same region, if using optical satellite data. Fortunately, both Landsat data from the U.S. and CBERS data from Brazil are well-archived for this region and are affordable for national-level monitoring. We have acquired both types of imagery covering the past two decades and have confirmed that well over 80 percent of the country's forest cover can be observed for circa 1990, 2000 and 2005. Our partners, CI have already begun analysis of this time series and conducted a technical training workshop in Guyana In addition, RADAR data, from the Japanese-US sensor ALOS, are being acquired and analyzed by colleagues at Waaginen University and SARvision in the Netherlands.

These colleagues are responsible for generating RADAR-based estimates of forest change for the Guiana Sheild for the Japanese Space Agency (JAXA) – Kyoto Carbon project. These colleagues are also formal partners in the Guiana Sheild Initiative. The Landsat data are necessary to confirm forest trends prior to 2002 when the ALOS data became available. This includes confirming the extent of non-forest land in 1990 that are eligible for CDM activities. While experts agree that there is more information forest monitoring in the optical satellite data than RADAR data, both the optical and RADAR data have characteristics that make them appropriate for a combined time series. Both types of satellite images have excellent locational precision and internal geometric fidelity, enabling a precise spatial co-registration of the time series of images and maps produced from them. Both data types have resolutions from 20 m to 30 m, allowing detection of forest clearings

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[1] Global Observation of Forest Cover – Global Observation of Land Dynamics www.gofc-gold.uni-jena.de/redd

of less than two hectares with high accuracy. In addition, the GFC has aerial photographs, acquired in 1950, for the entire country. These data have already been used to produce vegetation maps. The air photos are of such a fine scale that they also are a source of validation data for the satellite forest assessments, complementing field validation surveys.

d) What are the main causes of deforestation and/or forest degradation?

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 or harvesting of a broader range of species, 2) the clearing of forested areas for mining, which accounted for 2.387 sq. mls in 2007, 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. (See Annex 1).

e) What are the key issues in the area of forest law enforcement and forest sector governance?

The existing Forest Law dates back to 1953. This law is very limited in its scope since it does not address critical elements of Sustainable Forest Management, and other governance and policy issues that have become topical. The Guyana Forestry Commission (GFC) has encouraged Sustainable Forest Management practices through the consultative development of guidelines, but formal enforcement has been challenged at times. Promotion of these guidelines and best practices is also limited, especially with private forest owners, small-scale state forest permission holders, and some Amerindian communities. More training and education on the interpretation and implementation of the guidelines must be completed. The significant costs of travel, communications documentation, and workshops will be funded through the REDD Readiness Plan. In addition, implementation of some of the guidelines requires significant initial financial investment, for example, the conducting of a forest inventory. Local communities and small scale operators simply do not have adequate financial resources so these costs must be incorporated into REDD planning, incentives and carbon pricing.

A new Forests Bill is currently being considered by the select Committee of Parliament. Eleven years of extensive consultation that began in 1996 and ended in September 2007 has resulted in a revised draft Forests Bill. The process included consultations with more than 23 entities including representative Amerindian Associations, local communities and their representatives, private sector entities in particular those in the forestry sector, and in conjunction with the World Bank.

The revised Forests Bill allows for "forest conservation activities" which include the preservation of forests for the purpose of carbon sequestration or any other form of environmental services. Investors therefore have the opportunity to invest in this area in accordance with the Government of Guyana guidelines that would be established to govern this.

In addition to the existing Forest Law, there is existing legislation governing forest reserves. Potential new carbon and biodiversity reserves include the Kaieteur National Park Act of 1929 (as amended 1999) which establishes the 63 000 hectare Kaieteur National Park, and the Iwokrama Act (1996) that establishes the 371,000 hectare Iwokrama Programme.

Protected Areas Legislation is now being drafted, with the first round of consultations that concluded in March 2008. This legislation will establish the framework for establishment of protected areas which will be part of the national initiative to maintain carbon reserves in areas of high known biodiversity value.

4) What data are available on forest dwellers in lands potentially targeted for REDD activities (including indigenous peoples and other forest dwellers)?

The Amerindian population comprises 9.2% (Population and Housing Census Report, 2002) of Guyana's overall population of 751,223 (Bureau of Statistics, 2008). In total there are nine (9) Amerindian groups namely: Akawaio, Arawak, Arecuna, Carib, Makushi, Patamona, Wai Wai, Wapishana, and Warrau. These groups are spatially distributed throughout the entire country in approximately one hundred and thirty one (131) Communities, of which at least seventy six (76) are titled. Other Amerindian communities are in the process of applying for legal title to areas that they have been occupying for several years, whilst some titled communities are seeking extension to their already titled areas. This process is being driven by the Government in consultation with the communities. To avoid potential problems, the Government has a policy that no commercial activities by companies will be allowed on areas currently a part of this titling/extension exercise until the titling or extension is finalized by the Government and community.

Amerindian forest dwellers currently have legal access to titled lands or user rights for approximately 2,406,190 hectares. The remainder of the forest resources is directly under the control of the Government.

Utilization of forest resources on Amerindian lands has undergone tremendous positive change since the early 1990's. Further reductions in emissions on Amerindian lands is possible because logging activities can be conducted in a more structured and planned manner. Amerindian communities can also benefit from improved forest inventories and forest management planning. In addition, the opportunity exists to reduce the incidence of 'slash and burn' for agriculture and human occupation.

Significant improvements were seen over the years when the GFC established a Community Forestry Program that provided Community Forestry Organizations (CFO's) with access to State Forest Lands, and in some cases, provided new equipment. The Guyana Forestry Commission is continuing to work with these organizations and Amerindian Communities in areas of forest governance, understanding and implementation of the Guyana Forestry Commission guidelines through regular extension activities. The GFC is also providing training to CFO's and Amerindian Communities on Reduced Impact Logging via a Forestry Training Centre which is funded by the Government of Guyana in collaboration with the International Tropical Timber Organization. CFO's and Amerindian Communities are accessing greater financial benefits due to efficiencies generated by sustainable forest management and the implementation of higher value-added activities.

Three examples of this success are the Three Friends Maria Elizabeth (Region 10), Orealla Siparuta (Region 6), and Caria Caria (Region 3). These communities were trained in reduced impact logging techniques, harvest planning, forest inventory and occupational health and safety requirements. These practices are now implemented in the logging activities of these communities, and have likely resulted in reduced deforestation emissions. Additionally, the Region 10 Agriculture and Forest Products Association and the Ituni Small Loggers Association benefited from GFC's extension activities and they are now able to increase value added activities through the utilization of portable milling technology in their conversion.   This model of enhancing technical capacity and value added capability of communities brings more revenue per hectare to the communities and the program could be expanded to other communities with adequate funding.

In the long-term, REDD solutions must provide viable alternatives to people and communities who avoid clearing and degrading forest for conversion purposes, especially "slash and burn" agriculture. The most recent example is the GFC's extension work in Kwebana (Region 1) and Batavia (Region 7) which enhances the capacity and livelihoods of these communities that implement sustainable forest management techniques. The GFC has worked with these communities to implement a more structured approach to forest management and to enhance their land-use planning techniques including specialized zoning of land areas.

Under future REDD programs, Amerindian communities must possess practical training to implement sustainable forest management principles, have access to reliable forest inventory data to improve forest management plans, receive benefits from REDD incentives, understand how their actions increase or reduce these incentives, and be fully involved in the harmonization of land-use planning and zoning to further reduce land-use conflicts.

Under the Amerindian Act, communities can manage areas of their titled land under different regimes, and they are allowed to declare portions of their land as conservation areas. For example, the Wai Wai Community declared their land area of 625,000 hectares as a community owned protected area, which should reduce emissions from deforestation because certain activities are restricted or disallowed altogether. The Wai Wai Community is very effective because the needs of their low population can be met with a small area of land.

The Government through the GFC will continue to promote the Community Forestry Program (CFP) countrywide by:

- Providing additional education and training to all existing Community Forestry Organizations (CFO's)
- Coordinating the formation of additional CFO's and providing them with relevant education and training to sustainably manage the state forest resources that would be allocated to them

These interventions will contribute to reducing deforestation and forest degradation.

The GFC will continue to provide education and training 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). The Government of Guyana will allocate a part of Guyana's REDD Readiness budget for this activity of providing training and extension services to Amerindian Communities.

5. Summarize key elements of the *current* strategy or programs that your government or other groups have put in place to address deforestation and forest degradation, if any:

Guyana's current Sustainable Development Strategy, launched in 1992, began to address deforestation and forest degradation through a series of actions centered around sustainable forest management and forest protection. These actions included the reorganization and strengthening of the Guyana Forestry Commission, the introduction of a Code of Practice for Foresters, and the promotion of Reduced Impact Logging. The strategy is built around four elements, namely, a) cross-ministerial coordination, b) institutional capabilities, c) technical programs, and d) community and Amerindian development.   This strategy is implemented through the GFC's protocols for community forestry management, the requirements placed on areas allocated to private investors, and the GFC's national monitoring system for forest utilization and resources management.

a) **Cross-ministerial coordination**
A Land Use Committee, chaired by the Commissioner, Guyana Lands and Surveys Commission (GLSC) meets on a regular basis to address issues that have the potential to develop into land use conflicts. The other members of this Committee include the Commissioner of the Guyana Geology and Mines Commission (GGMC); Guyana Forestry Commission; and the Executive Director of the Environmental Protection Agency (EPA). (See Annex

The National Climate Committee (NCC) was set-up in 1994 as part of the Natural Resources and Environment Advisory Committee (NREAC). The NCC was re-organized and strengthened in 2007 to address the increasing dangers posed by global climate change and to take advantage of the opportunities presented by REDD and the growing carbon markets. The NCC has broad stakeholder representation and a mandate to provide technical guidance on and coordination of Guyana's response to climate issues.

At the institutional level, the National Climate Unit was established within the Ministry of Agriculture as a first step towards setting up a National Climate Centre. It serves as the Climate Change Focal Point for Guyana. The role of the Unit is to 'facilitate the development in Guyana of a sound knowledge base of the realities of Climate Change and the identification and implementation of appropriate mechanisms and actions for effective response.'

Key agencies such as GLSC, GGMC, EPA, and GFC have made coordinated efforts over the past five (5) years to improve Guyana's monitoring capabilities. More recently, a Sustainable Land Management Project has been initiated by the GLSC in partnership with the GFC. This project will implement a land cover degradation assessment, and watershed management and resource valuation.

In terms of implementation of the REDD activities, the GFC will take the lead role in collaboration with other relevant Government Agencies and with the support of, Non-Governmental Organisations. It is also envisaged that for some specific activities, other agencies may actually take the lead role with support from the GFC and other appropriate entities.

 b) **Institutional capabilities**
The Guyana Forestry Commission has a robust system of programs that implement sustainable forest management (SFM) and reduce deforestation including a National Log Tagging and Log Tracking System that tracks and verifies the origin of logs and lumber.

The GFC worked with the ITTO and FAO to establish procedures and guidelines for SFM that included a Code of Practice for Harvesting Operations, and guidelines and procedures for developing forest inventories and annual management plans. The GFC is working with small concession holders and CFOs to extend these guidelines and rules to the management of smaller operations on areas that total over 860,000 hectares. These activities form a strong basis for forest certification, and they provide the main framework for legal verification. The Forest Stewardship Council (FSC) confirmed that a large timber concession in Guyana that follows the GFC Code of Practice is keeping with the basic requirements of FSC certification. SFM is expanding in Guyana due to the GFC applying the code of practice to small-scale entities to reduce transaction costs to achieve SFM. These capabilities can help reduce degradation emissions across both large and small scale holdings.

Forest sector transparency has been increased with the requirement that all concessions are publicly advertised prior to their consideration by the GFC and EPA. The larger concessions, that together cover over 6 million hectares, are required to develop a Forest Inventory, Business Plan and Environmental and Social Impact Assessment in a 3 year timeframe during which no commercial harvesting is allowed. These sustainable forest management practices have been shown to reduce emissions in parts of the Amazon in neighboring Brazil when compared to unsustainable or uncontrolled logging.

The EPA and GFC have established various types of Research and Reserve areas even though these primary forests have a high commercial value. In addition, retaining a portion of Guyana's State Forest Reserve as unallocated for commercial harvesting is a temporary form of protection. Expanding these protected areas and increasing the restrictions on allowable activities will have a critical role to play in reducing emissions from deforestation and degradation in Guyana.

Significant time and effort is required to assess the baseline reference scenario to determine the total emissions resulting from these activities at the national level.

c) Technical programs
Guyana Forestry Commission has also completed a limited amount of reconnaissance forest inventory at the national level.   This assessment is complemented with the management level and AOP level inventories required of concessionaires by the GFC.

The GFC has also issued concessions for conservation purposes under its present regime. The 80,000 hectare Upper Essequibo Conservation Concession (UECC) managed by Conservation International in collaboration with local communities is one example that reduces deforestation threats in both the short and long-term.

d) Community and Amerindian development
The GFC has managed a number of outreach, communications and extension programs with communities and Amerindian groups. The Guyana Forestry Commission has established a Community Forestry Program which entails the formation of Community Forestry Organizations (CFO's). These CFO's are provided with access to State Forest Lands, and in some cases, new equipment. Several Amerindian Communities are also provided with these extension services and Reduced Impact Logging (RIL) training. In the North Rupununi area, a community forestry project has been implemented, RIL skills transferred and other forest management services extended.

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6. What is the current thinking on what would be needed to reduce deforestation and forest degradation in your country? a) How would those programs address the main causes of deforestation?

The future strategy to be supported by FCPF Readiness funding is built around the same four elements, namely, a) cross-ministerial coordination, b) institutional capabilities, c) technical programs, and d) community and Amerindian development.

a) Cross-ministerial coordination
Guyana's forests also coincide with areas containing mineral endowment, hydropower resources, agriculturally productive areas, and ecotourism potential. Multiple land uses and competing land users in these sectors present land use conflicts. Therefore, the Land-Use Committee must be strengthened to better harmonize legislation, national land-use policy, and national physical plan related to improve land-use planning and zoning. In addition, the Guyana Geology and Mines Commission must upgrade its monitoring and enforcement systems. The various emissions profiles of these activities must be compared to the deforestation and degradation reference scenarios to tradeoffs between the economic gains from development versus REDD incentives.

Demonstration activities require alternative economic and employment opportunities are provided to stakeholders who 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, must be evaluated by communities in their development plans. Community forestry groups have produced handicrafts, crabwood oil and soap production, and the soap production has been a huge success in the Waini communities in the North West Region of Guyana.

b) Institutional Capabilities
Improved legislation is critically important to harmonize land-use decisions, expand protected areas managed
by both communities and the government, improve monitoring and enforcement of the GFC Code of Practice,
and to obtain true stumpage values from the timber resource extraction.

The establishment of a national system of protected areas with a supporting trust fund is a critical element in Guyana's strategy. The Government of Guyana is working with stakeholders to establish at least two new protected areas as part of its demonstrated commitment to biodiversity conservation and climate stabilization with support from the German Government.

Improving the forest industry efficiency, quality control, broader use of species, value added activities, and installed technology base may translate into less pressure on the forest in terms of volume extracted and economic value created for communities that use new technology.

Strengthening of the GGMC monitoring capability will have an immediate positive impact on the reducing illegal mining and related deforestation, and increasing compliance with the GGMC regulations.

The Guyana Forestry Commission will continue to work with the Community Forest Organizations and Amerindian communities to increase their understanding of the GFC's guidelines. In addition, as soon as the revised Forests Act is approved by Parliament, it is envisaged that all stakeholders, especially those directly involved in the forest sector will be adequately sensitized on the law.

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. REDD 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 must 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, the use of all terrain vehicles (ATV's) for monitoring, and use of remote sensing to detect illegal activities in the state forest estate. These improvements will provide useful information to enhance concession monitoring and chain of custody tracking to quickly identify illegal activities, and to help avoid creaming of the most valuable forest resources.

The national level inventory will provide a reliable 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 wiser 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 enable better use of fire as a useful tool, and so 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.

d) 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 because these areas are sometimes subject to logging intensities which are unsustainable over the long term. CFO's and Amerindian communities (Orealla, Kwebana and Batavia) have benefited from Reduced Impact 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.

Improving the capacity of local community groups and increasing the direct REDD incentives to Amerindian communities can help to reduce the practice of "slash and burn" for agriculture expansion or for human occupation.
As indicated earlier, the GFC will continue to provide education and training 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).

The Government of Guyana will definitely allocate a part of Guyana's REDD Readiness budget for this activity of providing training and extension services to Amerindian Communities.

e) Would any cross-sectoral programs or policies also play a role in your REDD strategy?

There are a number of possible programmes and policies which would enhance the benefits of the proposed REDD Strategy and that require cross-sectoral programs noted above. These include:

- Ecotourism
- Handicraft using NTFP's
- Aquaculture
- Reforestation/Rehabilitation/Restoration of deforested and degraded area.
- Establishment of forest plantations
- Ethno botanical research
- Conservation Concessions (based on market rate payments)
- Payment for local indigenous knowledge (IPR)
- Rural electrification using wind/solar/water energy
- Formal training/transfer of technology to support cottage industries
- Reducing threats from land-use change, mining and road infrastructure development

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f) Have you considered the potential relationship between your potential REDD strategies and your country's broader development agenda in the forest and other relevant sectors?

The Government of Guyana intends to maximize the benefits that can accrue from its natural resources to support its national development. Specifically, if the REDD incentives cover forest management costs, carbon transaction costs, and community opportunity costs, then the residual funding can be utilized for renewable energy and other low carbon economic development.

REDD strategies are expected to serve in the over all development of key cross-sectors of the country. REDD will not only serve to encourage avoided deforestation which in its self will help to keep the valuable forests resources and eco-system services intact, but it will also provide opportunities for local communities, encourage biodiversity conservation, and enable the development of rural communities in hinterland areas.

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g) Has any technical assistance already been received, or is planned on REDD? (e.g., technical consulting, analysis of deforestation or forest degradation in country, etc., and by whom):

Limited technical assistance has been received to accomplish the technical methodology development for REDD.

7. What are your thoughts on the type of stakeholder consultation process you would use to: a) create a dialogue with stakeholders about their viewpoints, and b) evaluate the role various stakeholders can play in developing and implementing strategies or programs under FCPF support?

The country's vast forest serves a common resource for many stakeholder groups including the Amerindians (the indigenous community), loggers and miners. All stakeholders should be consulted on REDD policy based on the principle of equity and fairness. Special focus groups will be created to pool ideas which should be channeled to the policy makers.

Stakeholders will be informed on REDD policies before identifying their particular roles so that broad engagement of stakeholders is based on an agreement among the parties to avoid limitations being placed on potentially disadvantaged groups.

Consultations carried out by the Government will include the indigenous peoples as key stakeholders. It must also be emphasized that the development of policies and guidelines has always been done through a thoroughly consultative process and the REDD process will be no different.

Relevant guidelines to support these policy positions would be prepared (again in consultation with stakeholders) by the relevant Government entities. Some stakeholder groups e.g. NGO's would also be requested to assist Government Agencies in both the consultation and guideline preparation phase, as well as the stakeholder awareness programs necessary to inform persons on these new developments.

a) How are stakeholders normally consulted and involved in the forest sector about new programs or policies?

The process used was to have consultation at the levels of communities and regions. In most cases, documentation was sent prior to the actual consultation exercises, so that the stakeholders were informed on the topics and could participate more effectively. Independent facilitators were sometimes used. The outcomes of the various consultations were then forwarded to the appropriate policy making bodies with the authority to make formal recommendations

Stakeholders were involved through several key processes including formal and informal sessions, outreach programmes, and discussion forums. Stakeholders representing wide cross-sections that include local communities, NGOs, Governmental agencies, concerned individuals, special interest groups, met on a regular basis to agree upon the way forward in developing policies. If a group raised relevant concerns or grievances, the policies and processes were modified accordingly. In come cases, special Boards and working groups comprising major stakeholder groups were formed and work-plans and strategy reports were presented to the Policy makers. Approaches were designed to involve stakeholders from different backgrounds and geographic locations.

In recognition of the special needs of local communities in addressing issues, initiatives such as the Ministry of Amerindian Affairs for example, were set up to allow indigenous communities to seek guidance and support for issues including those related to forestry. The Government also involves many local community advocate groups to participate effectively in the policy making process.
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b) Have any stakeholder consultations on REDD or reducing deforestation been held in the past several years? If so, what groups were involved, when and where, and what were the major findings?:

While the use of the terminology REDD is relatively new, the concept of REDD is not new to Guyana. Guyana has had a long history of engaging stakeholders in the policies for sustainable forest management and forest conservation aimed at avoiding deforestation.

The GFC has coordinated many stakeholder consultations along the many stages of implementing policies and programmes. The policy making process is guided by the policy makers, GFC, local communities, government agencies, groups, and individuals. Some of these include the EPA, Conservation International, Guyana Lands and Surveys Commission, the Forest Products Association, GGMC, The Amerindian People's Association and The Ministry of Amerindian Affairs. Many such organizations are governed by rules which call for stakeholder consultation at all levels.
Forestry management is also guided by many regulations which are promoted by the EPA through the EPA Act, the Guyana Forestry Commission Act, the National Biodiversity Policy and also Conventions such as the UN Framework Convention on Climate Change, the UN Convention on Biological Diversity, and the UN Convention to Combat Desertification. These regulations and conventions also have stakeholder consultation as key guiding principles. These methods have all been very successful in achieving sustainable forestry management.

More recently in 2007, Guyana took steps to initiate the REDD process. Consultations have been held at the national, regional and local levels with stakeholders that included national ministries, organizations, NGO's, communities and individuals (at least 23 groups consulted).

A Special High-level Committee was set-up by the Government in 2007 to address issues related to REDD. The group includes key sectors such as the Climate Change focal points, the Land Use planning sector, the Guyana Forestry Commission and the Office of the President and NGOs such as Conservation International.
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c) What stakeholder consultation and implementation role discussion process might be used for discussions across federal government agencies, institutes, etc.?

The process can involve a series of consultations between the policy makers and the relevant agencies. Discussions can be held through the formation of special committees, focus groups and workshops on a regular basis. The national government will play a role in leading, coordinating and providing the policy guidance to the process.

The existing coordination mechanisms at the policy and institutional levels of government responsible for natural resources and the environment will take on this responsibility.

d) Across state or other sub-national governments or institutions?

Sub-national governments (Regional Administrations) will provide governance inputs at the local level, with an emphasis on the public sector aspects.

e) For other stakeholders on forest and agriculture lands and sectors, (e.g., NGOs, private sector, etc.)?

NGO's and other private sector stakeholders will also have valuable input in presenting a wider view of the problems and issues. They can also play a role in helping to implement programmes.

f) For forest-dwelling indigenous peoples and other forest dwellers?

The process will adopt an approach that focuses on their special role in the REDD policy, implementation, benefits sharing, and their vulnerabilities. They will be consulted at all levels of representation including at the community level and through special initiatives and groups that represent their perspectives.

8. Implementing REDD strategies:

a) What are the potential challenges to introducing effective REDD strategies or programs, and how might they be overcome? (e.g., lack of financing, lack of technical capacity, governance issues like weak law enforcement, lack of consistency between REDD plans and other development plans or programs, etc.):

There are a number of challenges that have been identified in the introduction of REDD strategies and programmes that may be overcome by various efforts by government and other entities. These challenges are outlined below:

- Limited financial resources to undertake the necessary activities for plan and implement REDD activities in an effective and timely manner ;

- Limited numbers of in-country expertise and staff with technical skills to undertake the required activities for REDD;

- Limited institutional capacities to implement aspects of REDD activities including monitoring and enforcement;

- Regulatory agencies being constrained in its enforcement activities because of outdated legislation.

- Getting the forest industry to improve its efficiency, recovery and quality control procedures, and to move more into the added value arena.

- Getting the forest industry to broaden the range of species used and so reduce the pressure on the higher value current commercial species.

- Providing opportunities for the SFP holders to become engaged in added value activities, and to become involved in activities that make them more coordinated and effective e.g. formation of "clusters".

- Providing viable alternatives to persons/communities who clear or degrade forest for conversion purposes, especially "slash and burn" agriculture.

- Encouraging changes in practices so that interventions such as setting of fires for useful purposes (restoring pastorage; slash and burn) are done in a regulated and structured manner.

- Securing support from private forest holders and Amerindian communities on the need to comply with the GFC's guidelines for Sustainable Forest Management.

- Successful resolution and prevention of land use conflicts.

The key barriers to the success of the REDD target programs

In implementing the target programmes for REDD several barriers may present a challenge. Some of the key challenges are discussed below:

- Limited support from some stakeholder groups in implementing REDD activities;

- Limited international support for 'Good Practices' in forestry management practices for countries such as Guyana which have historically low deforestation rates. It is important that the FCPF recognize such countries and ensure that they are not excluded from consideration due to their low historical emission rates that do not indicate likely future emissions. It must be clearly recognized that Guyana took a deliberate decision to practice SFM in the utilization of its forest resources, at considerable expense and foregoing of lucrative economic opportunities.

- Financial returns from REDD need to be economically feasible for it to be considered as a viable alternative.

The above mentioned barriers can be addressed through the support of the FCPF. Such support will enable the strengthening of technical and institutional capacities to address REDD while establishing a coordinated approach to Readiness Planning. The adoption of a REDD strategy will be informed by several factors including the historical and projected emissions levels.

The strategy will also be tailored to address the issue of alternative economic employment opportunities, especially for persons at the community and small scale operations level. The strategy will also deal with the provision of incentives for taking steps to reduce emissions.

b) Would performance-based payments though REDD be a major incentive for implementing a more coherent strategy to tackle deforestation? Please, explain why. (i.e., performance-based payments would occur *after* REDD activities reduce deforestation, and monitoring has occurred):

Payments for measures to reduce degradation and deforestation, once these are competitive and sustainable, will allow for the promotion of alternative economic ventures, such as ecotourism, as well as provide resources for community development. They will also allow for the development of appropriate policies at the level of the political directorate and provide incentives for the forest planners and users to increase their SFM practices. This would positively impact on the forest sector contribution to GDP and stands to increase this percentage from its current level of 4% to approximately 8% in the medium term and 15% in the long term. The payment based systems will also have the added advantage of lower opportunity cost and infrastructure development saving as compared with harvesting activities that require expensive infrastructure investments in roads.

9. REDD strategy monitoring and implementation:
a) How is forest cover and land use change monitored today, and by whom? (e.g., forest inventory, mapping, remote sensing analysis, etc.):

Monitoring forest cover and land use change in Guyana is currently done by forest inventory and mapping. Forest inventory is done both prior to harvesting and following harvesting activities. Further, this is done at varying sampling intensities to accommodate different planning requirement over varying periods. The forest inventory information over the period 1970 to present allows the GFC to determine the overall commercial stocking at any one point and allows for some level of assessment to be made on changes in the Forest cover particularly forest stocking.

In the latter half of 2007, the GFC has made steps to integrate satellite imagery analyses and remote sensing technology to manage and monitor the change in forest cover. This new initiative proposes to utilize LANDSAT and CBERS images at medium resolution for the entire forest cover (20 to 30 m resolution) integrated with a selected number of high resolution images such as IKONOS and SPOT 5 to provide information on changes in the forest cover. The intention of this initiative is to commence a time series that can be monitored every 3-5 years, whilst being supplemented by forest inventory assessment to derive accurate percentages of forest cover changes. The early part of the time series will be based on mainly Landsat and CBERS data currently being analyzed by our partners in CI. Likewise, as described in Section 3c, our colleagues in the Netherlands and partners in the Guiana Sheild Initiative and JAXA-Kyoto Carbon project are processing and analyzing RADAR data for the most recent years. While both efforts are still in process, they represent the production of a thorough time series of forest change for the country, and a set of key partners for transferring technology to the GFC.

This initiative is currently being implemented by the GFC and will be completed by early 2009. The activities under this project will measure complex forest degradation at the national level and the REDD funding will greatly assist this process.

A key activity would be to develop and implement appropriate methodologies that which take into account National Circumstances such as low deforestation rates.

Please refer to Annex 4 – REDD Multi level Program

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b) What are the constraints of the current monitoring system?   What constraints for its application to reducing deforestation and forest degradation? (e.g., system cannot detect forest degradation of forest stands, too costly, data only available for 2 years, etc.):

The main constraint of the current system of monitoring which is forest inventory information utilization is that the last national forest inventory was conducted in 1950 and updated national information is not available. The inventory was not done at a national level over the past five decades owing to financial constraints. Technical capacity for dealing with remotely sensed information must be increased, although as noted in the previous section we have identified colleagues for training in forest monitoring with both optical and RADAR data.

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c) How would you envision REDD activities and program performance would be monitored? (e.g., changes in forest cover or deforestation or forest degradation rates resulting from programs, using what approaches, etc.)

The formulation and implementation of a national system to monitor emissions and emission reductions would be the basis for performance payments. Independent third party verification of this monitoring is critical. This process would entail training staff of the Guyana Forestry Commission (GFC) and other relevant agencies, and the capturing of forest data for REDD purposes, as well as processing and analysis of this data. Data from remote sensing, forest inventories etc. would also be incorporated in this analysis. The monitoring system will also look at other benefits such as improvements in livelihoods, and positive and negative effects on biodiversity.

10. Additional benefits of potential REDD strategy:

a) Are there other non-carbon benefits that you expect to realize through implementation of the REDD strategy (e.g., social, environmental, economic, biodiversity)? What are they, where, how much?

The REDD strategy would not only serve as a global climate change mitigation strategy but will serve to enable the following:

- Protection of vital local and global environmental services and values. It is important to recognize the multiple functions and benefits of forests for biodiversity protection, ecosystem functioning and local livelihoods.

- REDD will help to complement and reinforce ongoing forest governance processes aimed at promoting sustainable forest management.

- Integrate forests in sustainable economic development.

Implementation of the REDD Strategy will promote biodiversity conservation, and socially responsible development, further ensuring their integration into the country's investment drive. Investment in Guyana could then be branded a "REDD" investment activity, which will mean investing in projects that promote the maintenance of forest cover, hence contributing to global climate stabilisation.

Through the conservation of forest resources, implementation of a REDD Strategy will contribute to the maintenance of Guyana's rich biodiversity comprising over 6000 species of plants of which 5% are endemic, and over 500 species of birds across the entire hinterland.

In addition the Government of Guyana has in place a National Biodiversity Action Plan which is being implemented, and is currently in the process of establishing a National Protected Areas System. Environmental and Social Impact Assessments are a requirement for every major proposed Development Project.

By implementing a REDD strategy in the region, Guyana will contribute substantially to the protection of vital local and global environmental services through conservation and sustainable management of 9% of the Guianan Region, estimated to be 85% intact (with Guyana considered to be 80% intact), and which accounts for 20% of the world's freshwater production.

The application of a robust system of monitoring, necessary for marketing and receiving investments for ecosystem services will assist in streamlining forest governance processes through application of sound verifiable and rigorous principles, ensuring that good environmental practice already enshrined in the Guyana laws, are integrated into development.

The planning process that will lead to in a REDD Strategy will also assist stakeholders to better understand the interdependence between forest goods and services, providing a mechanism for natural resource management and decision-making that takes into consideration the bundle of goods and services that forests provide. Additionally, it will allow for consensus building around responsibility and benefit sharing mechanisms as the Strategy determines how carbon benefits are attained and apportioned

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b) Is biodiversity conservation being monitored at present? If so, what kind, where, and how?

In Guyana there are several initiatives undertaken to monitor biodiversity in the forested regions of the country. Initiatives have been undertaken by the Government of Guyana and organisations such World Wildlife Fund (WFF), The Iwokrama Rainforest Programme and Conservation International (CI). These initiatives support the wider National Biodiversity Action Plan of Guyana.

Iwokrama, for example, monitors biodiversity by monitoring access points (road and river monitoring, illegal activities , conducting surveys and other key activities. Selected groups of species are monitored while permanent sample plots for plants have been created and growth yields are monitored. Botanical surveys are also conducted

c) Under your early ideas on introducing REDD, would biodiversity conservation also be monitored? How?

Biodiversity conservation will be one of the parameters to be monitored in Guyana's REDD Plan. Any monitoring programme will include the following initiatives, inter-alia:

- Inventory and survey of species available;
- Monitoring of access points and areas;
- Use of effective indicators to measure changes; and
- Integration of civil society and local community groups in the monitoring process

In this context we benefit from our partnership with CI and other conservation NGOs and networks. Our surveys will contribute to global biodiversity assessments, by activities such as re-assessing the species criteria of the Red List to estimate threat, contributing to the IUCN global species assessments, and identifying Alliance for Zero Extinction (AZE) sites, Important Bird Areas (IBAs) and Key Biodiversity Areas (KBAs). In addition, these surveys along with the monitoring of trends in habitat extent will provide the data needed to produce the four headline biodiversity indicators of the U.N. Convention on Biological Diversity (CBD).

d) Are rural livelihood benefits currently monitored? If so, what benefits, where, and how?

Many rural communities in and out of the forested regions are monitored to capture information related to their livelihoods and other such social factors. Rural communities are monitored through many initiatives and records have been captured by national initiatives such as the National Bureau of Statistics. A large number of rural communities that live in the forested regions are made up of the Amerindians (Guyana's indigenous community). In Guyana, the Ministry of Amerindian Affairs was established to assist in the development of Amerindian communities. The Ministry also monitors rural livelihoods to some extent.

e) Under your early ideas on introducing REDD, would rural livelihood benefits also be monitored? How?

Rural livelihoods will be monitored. Special monitoring programmes will be setup, inventories will be done and studies and surveys will be conducted. Monitoring will be done at regular intervals. The Iwokramara Rainforest Programme for example, works closely along with 16 local communities and conducts social survey of the protected area on a regular basis.

11. What type of assistance are you likely to request from the FCPF Readiness Mechanism?

Guyana's national circumstances are similar to many other countries that have historical low emissions from deforestation and that provide stewardship over 18% of the world's tropical forest carbon. Guyana is requesting the FCPF to support Guyana to lead global innovations and develop new methodologies that may be replicated by partner countries with similar circumstances.

President Jagdeo has demonstrated the political will to move forward in a bold way on REDD, the biodiversity and social outcomes that can be supported by REDD are clear and compelling, and the cost to achieve significant emission reductions from deforestation and degradation are reasonable.

The table in Annex 3 outlines the major categories of assistance that are required in the next 6-9 months to develop the REDD Readiness Plan. The 3 year activities are also outlined, and these would be further documented in the final Readiness Plan.

a) Setting up a transparent stakeholder consultation on REDD (e.g., outreach, workshops, publications, etc.):

Guyana seeks assistance from FCPF to support the development of a system to provide targeted financial incentives for REDD. This system will include a transparent governance structure whose development will involve the key stakeholders (i.e. those whose activities are more likely to cause deforestation/degradation). The system would be designed in a manner that allows financial incentives to be made readily accessible to these groups to further encourage a reduction in deforestation and degradation activities.

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b) Developing a reference case of deforestation trends: Assessment of historical emissions from deforestation and/or forest degradation, or projections into the future.

As described in Section 2b, Guyana's national circumstances indicate that past trends likely do not fairly represent expected trends in the near future. For this reason we will produce a projected baseline of both deforestation and degradation. The deforestation projections will be based in part on econometric modeling and spatial modeling, supported by assumptions and best estimates of specific parameters that will come from expert workshops in Guyana. We will use the IDRISI modeling software to determine which areas are most likely to be deforested by when, based on land-suitability analyses, access, population distribution and movement, past associations of deforestation patterns and these factors within Guyana and neighboring areas, and mathematical modeling of future trends. While this may sound like much jargon, this approach has commonly been applied in many site level projects and also fits within almost all of the proposed approaches for national-level baselines submitted to the UN FCCC. The approach is also globally applicable, as in most areas data on these factors can be available. The approach is also similar to the methodology proposed at the site level for the World Bank's Biocarbon Fund. Our partner, CI, is on the review panel of the Biocarbon Fund methodology and is also on the methodology review team of the Voluntary Carbon Standards. Finally, CI has partnered for years on such modeling with Clark Labs, creators of the IDRISI models and international leaders in land-use change modeling.

Baselines for logging trends in Guyana also must be projected, given newly-defined logging areas. This does not need to be as much a spatial modeling process as for deforestation. Instead, it must be mainly based on assumptions of government policy, eg how many logging concessions and where. However, we must identify the proportion of the concessions that are of low suitability for logging, and include data on logging rates per area and total biomass impacts, including damage to and mortality of surrounding trees.

A forest management unit/concession, new protected areas, forest concessions and indigenous/community territories may be used as test case demonstration activities that link to national-level accounting and carbon registry tracking.
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c) Developing a national REDD Strategy: Identification of programs to reduce deforestation and design of a system for providing targeted financial incentives for REDD to land users and organizations (e.g., delivery of payments, governance issues, etc.):

The Government of Guyana will require assistance through all stages of the REDD process.
Major areas requiring assistance will be required for:

- Assessing historical emissions from deforestation and degradation;
- Projecting emissions from deforestation and degradation into the future using a national reference scenario;
- Preparing a national REDD strategy; and
- Establishing a monitoring system for emissions from deforestation and degradation.

Technical, financial and institutional support is requested.

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d) Design of a system to monitor emissions and emission reductions from deforestation and/or forest degradation:

We intend to first complete a baseline time series of deforestation and degradation with our colleagues in CI and the Netherlands team working on the JAXA-Kyoto Carbon project. As the project is implemented, we plan on monitoring trends every two years. A high level of technical and financial support will be required to build the capacity to establish in-country monitoring described above.

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e) Other:

Readiness Planning Activities	Total Budget/USD	FCPF Request/USD
REDD Strategy and Planning Process	$150,000	$100,000
Technical Strengthening, Forest Inventory Update, Monitoring Planning	$,500,000	$350,000
Stakeholder Outreach	$,150,000	$75,000
Governance and Financial Structure	$,100,000	$90,000
Demonstration Initiatives	$,100,000	$85,000
Total	**$1,000,000**	**$700,000**

12. Please state donors and other international partners that are already cooperating with you on the preparation of relevant analytical work on REDD. Do you anticipate these or other donors will cooperate with you on REDD strategies and FCPF, and if so, then how?:

Several donors and international partners have expressed an interest in support REDD related activities and these include the World Wildlife Fund (WWF), UNDP, IDB, and CI. The Guiana Shield Initiative, funded by IUCN Netherlands, has started work at Iwokrama in Guyana as a pilot site to test compensation mechanisms for provision of environmental services. Efforts are underway to secure assistance from funds under Guyana's UNFCCC GEF-4 RAF.

Other institutions such as the FAO, IDB, CDB and the ITTO may be approached for possible technical and/or financial assistance mainly in the REDD strategy planning process. 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 of the National Climate Committee and its member institutions, in particular the GFC, to execute and manage the REDD programme.

13. Potential Next Steps and Schedule:
Have you identified your priority first steps to move toward Readiness for REDD activities? Do you have an estimated timeframe for them yet, or not?

The priority first steps will be focused on technical strengthening including assessing carbon stock, forest inventory, engaging key stakeholders and facilitating the necessary workshops to garner a wide cross section of inputs in the planning stage. The estimate time frame for implementation of the General Readiness Plan outlined in Annex 3 is 3 years.

14. List any Attachments included
(Optional: 15 pages maximum.)

ANNEX 1 – Guyana Forest Cover Maps and Data

ANNEX 2 - Additional Technical Information

ANNEX 3 - General Readiness Plan Activities

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ANNEX 1: Guyana Forest Cover Maps and Data

Table 1: Forest Allocation as Recorded by the Guyana Forestry Commission

Classification	Count	Area (Hectares)	% Area Type	% Total Allocation	% State Forest
				December 31, 2007	
Production Area Allocations					
State Forest Permissions (SFP)	299	863,750	12.5%	10.3%	6.3%
Wood Cutting Lease (WCL)	3	295,610	4.3%	3.5%	2.2%
Timber Sales Agreement (TSA)	27	4,492,366	64.8%	53.4%	32.8%
SFP Conversion Areas	27	540,481	7.8%	6.4%	4.0%
State Forest Exploratory Permit (SFEP)	4	737,264	10.6%	8.8%	5.4%
Total Production Area Allocations	**360**	**6,929,471**	**100.0%**	**82.3%**	**50.7%**
Permanent Research & Reserve Areas					
Iwokrama Research Site	1	371,592	25.0%	4.4%	2.7%
GFC Forest Reserves	11	18,147	1.2%	0.2%	0.1%
Other Research & Reserve Sites	3	1,095,955	73.8%	13.0%	8.0%
Total Research and Reserve Areas	15	1,485,694	**100.0%**	**17.7%**	**10.9%**
Total Forests Allocated	**375**	**8,415,165**		**100.0%**	**61.5%**
Unallocated Forests		5,263,451	**38.5%**		38.5%
Total State Forests		13,678,616			100.0%

Please see Forest Cover Map (Map 1) and Forest Degradation Map (Map 2) attached

ANNEX 2: Additional Technical Information

TECHNICAL

1.1 DATA

Physical

(1) Does your country have a forest inventory? (Forest inventories typically provide very accurate, on-the-ground estimates of timber volume, biomass, etc. Together with statistics on forest-area change, access to forest inventory data is critical to quantify carbon emissions resulting from land conversion.)

- **Is it a national or regional (protected areas only) inventory? (It is important to know how representative the inventory is of existing forest conditions)**

Yes – to some extent.

- **When was it implemented? (If an inventory was conducted only once in the distant past it will not be representative of current conditions but may be useful for establishing historical baselines)**

Regional forest inventory was conducted in the 1970s. (recorded by average number of trees 16" (41cm) diameter and over per 100 ha per region in Guyana).   Some amount of management level inventory (2% sampling intensity of all species) also had been done for a few large forest concession areas. Recorded n/ha or n/km2 (that is, number of trees per km2 or ha) by forest type by diameter class discounting for defective stem quality.

- **What is the spatial intensity (i.e., plot density) and temporal frequency (i.e., time between inventories) of data collection? (The higher the spatial and temporal frequency, the greater the capacity to monitor forest change)**

The spatial intensity was 0.2% for the concession level inventory. The forest types are uniform and the coefficient of variation of the species composition is below 50% thereby making 0.2% a statistically robust sample size.

- **Are sample plots permanent, i.e., revisited and re-measured during subsequent inventories? (Permanent plots are more useful for monitoring forest carbon uptake/emissions)**

The sample plots are not permanent. However in two areas of the country (Mabura; Pibiri) there are several Permanent Sampling Plots (PSP's) that were established for research purposes by Tropenbos in collaboration with the GFC. These PSP's have been subject to regular re- measurements.

- **Is remotely sensed data used? If so, how? (Remotely sensed data can be useful in determining *where* changes are taking place, a question that may not be answered well with traditional inventory data)**

  Remotely sensed data has not being used by the GFC. Aerial photos were used for mapping vegetation cover. However these data are used by our partners and colleagues, as described in Section 3c, and they are identified as partners for training of the GFC.

(2) Are locally derived, species-specific allometric biomass equations available? (Allometric equations are needed for computing biomass estimates from forest inventory data. Local allometric equations provide more accurate estimates of biomass than regional equations do.)

The only comprehensive study to date was done by Hans ter Steege: Biomass Estimates for Forests in Guyana and Their Use in Carbon Offsets. 2001.

(3) Do you have access to remotely sensed data(satellite imagery, aerial photography)?

GFC has access to remotely sensed data with coverage of the entire State Forest Estate of Guyana and to a spatial resolution of 20m (CBERS) and 30m (LANDSAT). Our colleagues in the Netherlands have access to and are analyzing ALOS data as part of the JAXA-Kyoto Carbon project. In addition, both Landsat and mosaics of ALOS RADAR data will begin to be made available for free in late 2008.

GFC has aerial photographs for the entire Guyana. This was used to generate a map showing the various vegetation types over the land mass of Guyana. This map is to a scale of 1:1,000,000.

(4) What spatial data do you have access to?

GFC has spatial data for the following for the entire Guyana:

- Land Cover – GFC has land cover map and has segregated areas by concession allocation. 1:50,000. Date: 2008
- Vegetation properties/types (map enclosed - GFC) 1:1,000,000 (Date 2001)
- Soil types/properties – at a scale of 1:1,000,000 (Date: 1999) Source: NARI
- Climate – source of map is the Hydromet. Department.
- Hydrology – GFC has rivers and creeks map integrated into the Land allocation map attached. Scale is 1:500,000. Date: 1999. GINRIS – Guyana Integrated Natural Resources Information System/GTZ Project
- Transportation map – GFC has a roads and rivers network map to the scale of 1:50,000. Date: 2008
- Demography/population density map – no map available.

Economic

(1) Describe economic databases currently available. The objective of identifying these data bases is to identify the information available and how best to improve it to allow for regional economic analysis of land use change. The list below attempts to capture general aspects of data availability, quality, and distribution. Additional comments, or the identification
of missing data sources, are also useful. For each economic database created and maintained by the government, please provide the following information:

- ▪ **What department/organization is responsible for data collection?**
GFC has the following databases available: Production, export and prices, inventory, forest licenses databases, GIS database, forest concessions database.
- ▪ **What is the frequency of the data? i.e., weekly, monthly, quarterly, annually?**
The GFC collects data. The data is collected monthly, quarterly and annually. Data for inventory extends over the period of the 1950s to 1970s to current. Production and export data extends to 1995.
- ▪ **How are the data summarized/reported, and are they publicly available/freely accessible?**
Most of this data is publicly available.

- ▪ **Are the data available for download from the internet?**
Some of the data is on the interned and can be downloaded: e.g production and export and land coverage.

- ▪ **Does the information cover the entire country? If not, what area of the country is covered? What is the coverage of the data? (e.g. national, state, local, household)**
The information is national in scope.

1.2   ANALYTICAL

(1) Briefly summarize the most important studies related to deforestation and/or land use/land cover change in your country, including issues on governance, legal frameworks, infra-structure and socio-economic dynamics? (This will provide an overview of what information is available today for policy makers. Provide background and details of the research available, and briefly review the relevant literature under the headings of: iophysical; social; economic)

- ▪ GFC reports on forest concession allocation
- ▪ Global Forest Resources Assessment 2005
- ▪ ROPENBOS publication on forest dynamics

(2) Describe the known and perceived gaps in this research. What kind of information is still be needed? (Comment on technical gaps that are apparent or, should that knowledge not be available, on what is believed to be the most useful information that is not yet available).

Research that measures the rate of deforestation, land conversion and degradation at the national level. Research that gives a detailed assessment of the National Standing Forest Stock.

(3) How much of this research was conducted by in-country experts? (If none, estimate the percentage of the research completed wholly by, or in conjunction with, international researchers – the objective is to identify a current level of independent in-country research capacity and involvement. The long term objective will be to have combined national and international teams, and this question provides a benchmark of local participation.)

Most forest research conducted in this area was done with local counterparts form Guyana.

(4) Describe the known or perceived gaps in in-country analytical capacity. (Comment on what gaps are apparent or, should that information not be available, on what is believed to be the most useful addition to analytical capacity.)

Information on national forest inventory and updated remotely sensed data and aerial photographs for the entire State Forest is not available

2.   INSTITUTIONAL

These questions regarding institutional capacity are designed to identify needs and establish the means by which they could be met.

(1) Which institution is responsible for forest inventories in your country? (Please describe the structure and capacity of the institution(s).)

GFC

(2) Which government institutions, NGOs, or other organizations will be responsible for monitoring and verifying land use/land cover change, and how do you plan to manage collaborations between/among these institutions? (This question is intended to establish the benchmark for current capacity and help design a work plan for improvement. Please describe the structure and capacity of all institutions involved.)

GFC/GLSC

(3) How will you work in conjunction with independent national or international consulting teams? (This question will allow the country to establish plans for improving capacity and service delivery. Describe which ones and their roles.)

GFC has been engaged in several donor funded project and has had to work in the past with independent nationals and consulting teams – e.g ITTO project on forest law enforcement, and WWF project on capacity building, FAO projects All projects were successfully implemented within the time scheduled and budget allocations.

(4) How do you plan to work on carbon emission reduction activities with the stakeholders involved? (Explain your communication strategy with the agricultural, logging and other sectors that could be affected by REDD policies.)

A national policy will guide the interaction and communication with the relevant stakeholders. This will always be conducted in a consultative and inclusive manner.

(5) Has the Government already plans on how to use future revenues from REDD and how it would redistribute income from carbon emissions reductions/avoidance? Or should this be elaborated during the Readiness Process? (Outline major distribution channels for funds to be distributed by government agencies. Identify any voluntary markets within the country and the means by which these transactions are monitored.)

Revenues from REDD will be used for the benefit of national development, enhancement of forest sector development activities and community development and capacity building. This will be addressed in Guyana's national policy for climate change.

(6) Is there already a plan on how to harmonize REDD policies with existing natural resource policies?
(REDD policies may overlap with current policies related to natural resources. Identify where there may be conflict between current and REDD policies and institutions)

This will be addressed under the National Climate Change Policy

Background Information and Published Articles

Title and Author	Publication Source	Year
Tropical Deforestation – A Socio Economic Approach (CJ Jepma)	Earth Scan	1995
Biomass Estimates for Forest in Guyana and their Use in Carbon Offsets (Hans ter Steege)	Iwokrama	2001
Global Forest Resource Assessment 2005 (FAO)	FAO	2005
Development of Growth Models for Applications in Guyana	GFC	2000
Land Use, Land Degradation and Land Management (P. E. Williams, M. J. Eden)	Commonwealth Geographical Bureau	1997

ANNEX 3: General Readiness Plan Activities

Readiness Plan Components	6 months	Year 1	Year 2	Year 3
Technical Strengthening: Methodology and Measurement				
Assessment of historical emissions from deforestation	X	X		
Assessment of historical emissions from degradation		X	X	
Projection and modeling of future emissions from deforestation			X	X
Projection and modeling of future emissions from degradation			X	X
Update biomass field estimates across all land-uses including deforestation and degradation		X	X	
Create a national-level carbon methodology that includes project-level activities		X		
Develop carbon, biodiversity and social criteria and spatially-explicit dataset to target incentives to the highest outcome potential			X	X
Establish national level permanent biomass monitoring plots representative of all geographic regions and forest types, and create monitoring plan and protocol		X	X	
Establish a capacity building plan for biomass monitoring activities	X	X		
Develop a capacity building plan for GIS and remote sensing activities	X	X		
Create an informational platform to integrate monitoring data at the national level	X	X		
Increase engagement in UNFCCC SBSTA and other key meetings to build support for Guyana's baseline and methodology	X	X	X	
Facilitate workshop with other countries to exchange experiences on remote sensing and monitoring plans		X		X
Demonstration Initiatives				
Determine structure for implementation of pilot activities including administration, funding, and implementation		X		
Community outreach, communication and education on climate change, carbon project design and REDD incentives		X	X	X
Undertake capacity building for carbon and pilot project activities			X	X
Facilitate study tours with other counties to exchange experiences on potential field demonstration projects		X		
Establish clear criteria for evaluation and selection of pilot projects		X		
Identify pilot activity candidates and make selection based on criteria		X	X	
Develop and implement capacity building			X	X

plan for field teams and local partners to implement pilots		23	▓	▓
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 (Slash and burn agriculture, illegal logging)		▓	▓	
Integration of REDD and broad land-use planning into the rural and community development plans		▓	▓	
Governance and Financial Structure				
Strengthening the GFC and other agencies including the National Climate Committee and National Climate Unit	▓	▓	▓	▓
Develop and implement capacity building plan for government agencies on issues related 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			▓	
Institutional frameworks including carbon marketing and negotiating unit			▓	▓
Creation of transparent benefits sharing arrangements for targeted financial incentives for REDD			▓	▓

Annex 4: Guyana's Multi-level REDD Programme

Please find attached