PROJECT INFORMATION DOCUMENT (PID)
APPRaisal STAGE

Report No.: 41471

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<tr>
<th>Project Name</th>
<th>Guyana Skeldon Bagasse Cogeneration Project</th>
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<td>Region</td>
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<td>Sector</td>
<td>Renewable Energy/Power (100%)</td>
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<td>Project ID</td>
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<td>Borrower(s)</td>
<td>Guyana Sugar Corporation Inc.</td>
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<td>Implementing Agency</td>
<td>Guyana Sugar Corporation Inc.</td>
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<td>Environment Category</td>
<td>[X] A   [ ] B   [ ] C   [ ] FI   [ ] TBD (to be determined)</td>
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<td>November 3, 2005 (Revised August 8, 2006; November 12, 2007)</td>
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<td>Date of Board Approval</td>
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1. Country and Sector Background

The Sugar Sector

In Guyana, the key CAS priorities include increasing the competitiveness of the country in the world’s sugar market, improving access to rural electrification and other basic social services through infrastructure investment, and achieving improved environmental management. The CAS has a clear vision for a new sugar mill to modernize the country’s sugar industry. The sugar sector generates nearly a quarter of Guyana’s sugar exports, while around 125,000 persons rely on the sugar industry for their livelihoods. The Government of Guyana has embarked on a modernization strategy for the sugar sector aimed at eliminating fiscal subsidies to sugar production, and positioning the sector for growth and future private investment.

In November 2005, the European Agricultural Council agreed to cut the EU guaranteed price for sugar exports from the Caribbean and other ACP countries by 36 percent over the next four years starting in 2006. Guyana’s sugar sector is likely to face a large setback as a result of the reduction of preferential prices and quotas to the EU market. Preferential sales of sugar to the EU market account for half of its total sugar production volume and 70 percent of industry revenues. The Guyana Sugar Corporation (GUYSUCCO) calculates that the sugar subsidy cuts will reduce the sugar industry’s revenues by US$22 million in each of the crop years 2005-2006 and 2006-2007, and another US$37 million in the following crop year (Guyana Investment Climate Assessment 2006).

The prospects of eliminating preferential sugar arrangements by the EU, together with stiff competition in the world market, have led the Government to institute a restructuring plan for GUYSUCCO which involves modernization of production facilities and efficiency improvements. The Government is convinced that even if preferential prices are eliminated, the country’s sugar industry will survive if operational efficiency is improved and production costs are lowered. The
ongoing Skeldon Sugar Modernization Project (SSMP) is a key aspect of the restructuring plan. It is anticipated that with the SSMP, Guyana will be able to compete at world sugar prices, and it almost certainly will be a model operation in the Caribbean region.

The Electricity Sector

In Guyana there is a critical need for reliable electricity supply at affordable prices. This concern is analyzed in detail in a recent World Bank document entitled *Guyana Investment Climate Assessment* (ICA 2006). The ICA reports that reliability of electricity supply is low, and characterized by frequent and long outages, load discharges and voltage variations. Poor reliability has been linked to dependence on old and obsolete equipment for power generation, underinvestment in the distribution grid, and lack of incentives for efficient provision of service. The poor quality of electricity supply becomes a key obstacle to growth. For example, companies’ losses attributable to energy outages are estimated to reach up to four percent of their total sales on average. Since large firms can afford to invest on own power generation equipment, these losses are relatively smaller for them than for small firms.

Electricity prices in Guyana are the third highest in the Caribbean due in large part to the country’s reliance on expensive imported oil for electricity generation. At present the cost of fuel accounts for up to 60 percent of the total cost of electricity generation. Recent oil price hikes are passed on to consumers, as logically part of such increases in production inputs would be reflected in the price that consumers have to pay.

As the electricity sector plays a strategic role in the sustainable development of the economy, the Government of Guyana is committed to the exploration and full use of renewable energy sources. The National Development Strategy states that the overall objective of the energy sector is to secure an adequate and dependable supply of electricity for future economic development of the country. This will involve reducing Guyana’s dependency on imported petroleum products which account for more than half of its energy production; fully exploring the production and utilization of new and renewable domestic energy sources; ensuring that energy is used in an environmentally sound and sustainable manner; and encouraging energy conservation practices through public awareness programs and incentives. Achieving the Strategy objective will require substantial capital outlays and also improvement in the management of the energy sector.

To demonstrate the Government’s commitment to achieving energy self-reliance, the Guyana Energy Agency (GEA) was established and came into operation on June 1, 1998. Its mandate is to ensure the efficient use of imported energy, while promoting increased utilization of indigenous and renewable sources of energy. (GEA succeeded the Guyana National Energy Agency that was created by Act No. 2 of 1981.) In addition, a System Development Plan prepared by the Guyana Power and Light Company (GPL) reflects the official government policy of utilizing the country’s renewable energy resources such as biomass and hydropower. The Prime Minister, in a press release in 2000, cited bagasse cogeneration in the GUYSUCO sugar mills as a viable national option to pursue and one that could attract global climate change benefit support.
2. Objectives

The overarching objective of the proposed Bagasse Cogeneration Project is to help mitigate global climate change by facilitating the use of market-based mechanisms sanctioned under the Kyoto Protocol through support to clean energy projects in Guyana. To this end, the Project will generate greenhouse gas Emission Reductions (ERs) in the country’s power sector, where these will be sold to the World Bank Carbon Finance Unit when they are verified and certified.

The Guyana Skeldon Bagasse Cogeneration Project will consist of the addition of a more efficient cogeneration plant to the ongoing Skeldon Sugar Modernization Project (SSMP) – a modern sugar factory that will manufacture Very High Pol (VHP) raw sugar. The Cogeneration Project will generate bagasse-based electricity for internal use in the factory and for sale to the Berbice regional grid, and will displace the use of light fuel oil in diesel engine-driven generators operated by the Guyana Power and Light Company. As the utility currently has insufficient capacity, there is extensive use of self-generation by industry and households. The Project thus has the potential to displace a significant amount of this unregulated and inefficient self-generation as confidence in reliable supply is progressively built over time.

The Project will mitigate nearly 626,300 tCO2-e over a 14-year period and will receive Certified Emission Reductions (CERs), often referred as carbon credits. In the context of the Clean Development Mechanism (CDM), these carbon credits are based on the difference in greenhouse gas (GHG) emissions between the most likely future practice (known as baseline scenario) and proposed practice due to project activity (known as project scenario). By displacing fossil fuel use in energy generation, the Project will contribute to a reduction in the impact on climate change and is therefore eligible to receive carbon credits.

The carbon credit component of the Project will be funded by the Community Development Carbon Fund (CDCF), which is managed by the World Bank. CDCF supports projects which are expected to generate GHG emission reductions while complying with requirements of the CDM of the Kyoto Protocol, Article 12.

The Project will also assist Guyana in achieving the following objectives:

- To facilitate the commercialization of renewable energy applications and markets at the grid-connected level;
- To catalyze local and foreign investments in energy generation to respond to increasing energy demand and energy diversification needs;
- To provide economic and financial benefits to Guyana from reduced exposure to fluctuating costs of imported fuel; and
- To provide direct and indirect social benefits from having reliable power supply to meet growing commercial and industrial demand in the Berbice region, leading to a more stable economic environment that promotes job creation.
3. Rationale for Bank Involvement

The World Bank Carbon Finance Unit (CFU) intends to promote clean energy development projects in developing countries, with the objective of reducing carbon emissions at a global scale and mitigating climate change.

The overall strategic objective of the Guyana Skeldon Bagasse Cogeneration Project is to help mitigate global climate change through support to renewable energy production in Guyana. The Project is the ‘first of its kind’ in the country. It will replace additional generation capacity at the grid level that would otherwise be procured by the GPL from diesel generation.

The least cost capital investment alternative for new capacity to serve GPL is diesel because of the small scale of the national grid and the great distance of any other technically viable alternatives from the Berbice region. Bagasse cogeneration is an alternative that allows postponing the installation and/or dispatch of thermal energy generation utilities. With the Project assisting the country to facilitate utilization of renewable energy resources such as biomass, the country’s dependence on imported petroleum products is reduced. While this will provide economic and financial benefits to Guyana in terms of direct foreign exchange savings and reduction in exposure to the fluctuating costs of imported fuel, the Project will also contribute in stimulating and accelerating the commercialization of renewable energy applications at the grid-connected level.

As stated earlier, the Project is well correlated with key CAS priorities in increasing Guyana’s competitiveness in the world’s sugar market and in improving access to basic social services, including rural electrification. The CAS also cited the need for a new sugar mill to modernize the country’s sugar sector in light of the fact that Guyana’s economy has been heavily dependent on the sugar industry. In the environmental area, the SSMP supports agricultural expansion, but with commitment to the principles of sustainable natural resource use and the protection of natural habitats. The carbon revenues from the sale of CERs to be generated by the Cogeneration Project will boost the attractiveness of similar projects and will help to further increase the production of clean energy in the country.

In addition, the Project supports the Bank’s strategy on carbon finance. The World Bank’s involvement in carbon finance helps ensure consistency between the individual projects it supports and international dialogue on climate change, while providing the ability to mobilize global experts with experience in the field, technical support for project preparation, supervision capacity, and development of linkages with other sources of expertise and funding. By mobilizing the private and public sectors on an important new source of project finance, the CFU is developing an important knowledge base and is demonstrating how insights and experience from both sectors can be pooled together to attract additional resources for sustainable development and address global environmental concerns.

4. Description

The Project has two main components: (a) bagasse-based heat and power cogeneration; and (b) carbon credits based on fossil fuel displacement in energy production.
(a) Under the ongoing SSMP, the existing sugarcane area in the Berbice County will be expanded. The cane supply will come from the Skeldon Estate (expanded from 4,800 to 9,500 ha) and from holdings of private farmers (expanded from 300 to 4,165 ha) who will cultivate cane exclusively for sale to GUYSUCO. The Guyana Skeldon Bagasse Cogeneration Project will be added on to the new Skeldon sugar factory design to allow the simultaneous production of electrical power for internal needs and for sale of excess power to the Berbice regional grid. The cogeneration plant will use bagasse from the sugar factory during the cane crop seasons, and will be equipped with diesel generating capacity for co-firing fuel oil during off-crop periods when bagasse stocks have been exhausted. Under this project scheme, surplus electricity will be generated at an average of 10 MW of electricity delivering approximately 77 GWh per year to the regional grid on a firm power, year-round basis. Of the 77 GWh to be exported to the grid annually, about 85 percent (65.45 GWh) will be generated directly from bagasse, with the balance from fuel oil during off-crop periods. In addition to the grid export, 58.8 GWh per year will be produced for internal use at the sugar mill.

The Cogeneration Project will not change the likelihood of the new Skeldon sugar factory being built in the first place, and by itself will not increase the area of cane that will be cultivated for the sugar factory.

(b) Carbon Purchases. The World Bank as Trustee of the CDCF will purchase at the minimum 309,500 tCO2-e (tonnes of carbon dioxide equivalent) generated by the project through 2014 at a unit price of US$11 per contract Certified Emission Reduction (CER) through 2012, and $9 per contract Verified Emission Reduction (VER) through 2014. In each instance, one US Dollar per tCO2e shall be used for Community Benefits pursuant to the Community Benefit Plan. Total CER purchases will be about US$ 3.224 million.

5. Financing

The World Bank as Trustee of the CDCF intends to purchase at the minimum 309,500 tCO2-e (ERs) generated by the project through 2014 at prices indicated above. Apart from this CDCF support in terms of payment against the delivery of certified ERs, the Project does not include any World Bank financing.

6. Implementation

The project sponsor, Guyana Sugar Corporation Inc. (GUYSUCO), is a state-owned corporation mainly involved in the cultivation of sugar cane and production of sugar. It was created in 1976, when the Government of Guyana nationalized and merged the sugar estates operated by Booker Sugar Estates Limited and Jessels Holdings to form the Guyana Sugar Corporation. The Project will be executed by GUYSUCO through a management contract with Booker Tate Ltd. Booker Tate is a private company acting as the Project Manager for the Skeldon Sugar Modernization Project and is also, under a separate management agreement, the Corporate Manager of GUYSUCO.
The project owner is the Government of Guyana which is the sole shareholder of GUYSUCO. The ownership of future CERs will be vested in GUYSUCO.

The CDCF, a fund administered by the World Bank CFU, will purchase greenhouse gas ERs from the proposed Project. For this purpose, GUYSUCO will sign an ERPA with the World Bank, which acts as the Trustee for the CDCF, which will permit disbursement against verified and certified ERs generated by the Project. After the Project’s validation by the World Bank and CDCF, the Government of Guyana must provide a Letter of Approval -- certifying that the CDM project contributes to sustainable development in the country -- so that the Project will be valid under the Kyoto protocol. The Guyana Skeldon Bagasse Cogeneration Project will be the first CDM project in the country.

The Clean Development Mechanism Designated National Authority for the Kyoto Protocol in the country is the Hydrometeorological Service of Guyana or ‘HydroMet’. Guyana ratified the Kyoto Protocol in April 14, 2003. The Government of Guyana will confirm its commitment to the Project in a Letter of Approval (LoA), dated 14 December 2006. Project validation has been completed and, with the approval of the Bank and the CDCF, is being submitted for registration with the CDM Executive Board.

7. Sustainability

The Project will contribute to diversification and sustainable energy development in Guyana, and will help build experience in diversifying potential financing for clean energy projects. In addition, the Project is the first CDM project in Guyana. It will contribute toward providing a basis for future CDM projects in the country and possible replications within the sugar industry in the surviving sugar mills or their replacements.

8. Lessons Learned from Past Operations in the Country/Sector

The proposed Guyana Skeldon Bagasse Cogeneration Project will be the ‘first of its kind’ in the country. The historical experience of sugar factory projects is that the seasonal nature of the sugar mill operations has been a hindrance to successful contracting for grid supply because the capacity could not be considered as firm. With Guyana’s two sugar processing seasons per year and storage of surplus bagasse to cover the between season periods, the integration of the proposed Cogeneration Project with the new Skeldon sugar factory has full value to the national grid company.

The Project is designed to ensure the availability of peaking power supply. Thus the cogeneration plant will have 15 MW of bagasse-based steam turbine capacity, in addition to 10MW of diesel generation capacity: one 2.5 MW diesel set for black-start and standby capability; and one 5MW and one 2.5 MW diesel sets to dedicate to the grid for peaking purposes and for use during off-crop periods if the bagasse supply runs out. Diesel generation for
these purposes will allow the cogeneration plant to supply power to the grid on a firm, year-round basis.

9. Safeguard Policies (including public consultation)

The responses shown in the table below pertain to the SSMP, and are presented here given the importance of the SSMP to the proposed Cogeneration Project.

As for the proposed Project, its impacts are not considered significant. They will arise from activities (cane crushing, bagasse burning, and co-firing with fuel oil when bagasse supply runs out) which are already taking place in sugar mills in the region, except in the case of the Project activity it will be in a larger scale. As the Project activity will (a) displace fossil fuel-based electricity generation by bagasse-based electrical power, and (b) avoid methane emissions by utilizing as fuel an extra 50,000 tons of bagasse which would otherwise be dumped and left to decay, it will result in a positive net environmental impact.

Furthermore, the Environmental Impact Assessment carried out for the SSMP reports that the bagasse co-generation plant will lead to reduced particulate and NOx emissions due to more efficient firing of bagasse. Emission concentrations from bagasse firing were estimated at 47.8 mg/m³ for particulates and 40 mg/m³ for NOx and fall within acceptable World Bank standards (150 mg/m³ for particulates and 70 mg/m³ for NOx).

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Compliance with World Bank Safeguard Policies (only ones triggered follow)

**Environmental Assessment (OP 4.01).** The Environmental Impact Assessment for the Skeldon Sugar Modernization Project (SSMP) (Final Environmental Impact Assessment Report: Proposed Expansion to Skeldon Estate, Ground Structures Engineering Consultants, March 2003), commissioned by GUYSUCO, has been completed. The EIA summarizes the stakeholder consultations that have been carried out on the SSMP project. GUYSUCO prepared a separate

*By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas.*
Environmental Management Plan (EMP) for the SSMP in July 2005. The EMP addresses all of GUYSUCO’s environmental management responsibilities, including those related to natural habitat and wildlife conservation, water quality, waste management, worker health and safety, and agricultural pest management. The EMP was assessed by Bank specialists, who concluded that it was of good technical quality, operationally useful, and consistent with the Environmental Assessment OP 4.01. Both the EIA and the EMP reports will be disclosed to the InfoShop, as well as in Guyana at GUYSUCO’s Georgetown headquarters and its Skeldon office prior to negotiation of the Emissions Reductions Purchase Agreement (ERPA). The Guyana Environmental Protection Agency (EPA) has issued a permit allowing GUYSUCO to proceed with both the SSMP and CDM projects.

The EIA report indicates that, other than the loss of natural habitats (discussed below), the other potential adverse environmental impacts of the SSMP are not very significant and are being handled adequately by GUYSUCO. Due to increased water use efficiency in irrigation, the expansion of sugarcane cultivation under the SSMP is not expected to affect local water availability for other uses; nor will it affect the flows of the Canje River (from which irrigation water is obtained). The quality of drainage water from expanded cultivation is expected to be similar to that observed for the existing cultivation, since the land preparation and management practices currently in use would be applied. Moreover, while the effluent from the existing sugar factory is not treated, the new factory would include an effluent treatment plant to significantly reduce biochemical oxygen demand (BOD), chemical oxygen demand (COD), and total suspended solids (TSS) before being discharged into the drainage canal. With respect to air quality, the current practice of burning cane at pre-harvest would continue on the new Skeldon cane fields. However, the EIA concludes that the effects of burning cane fields at pre-harvest, as well as burning of bagasse in the cogeneration plant, on the populated area will be negligible. In fact, the bagasse cogeneration plant will lead to reduced particulate and NOx emissions due to more efficient firing of bagasse. In compliance with its EPA permit, GUYSUCO has agreed to establish a sanitary landfill for wastes generated by construction and operation of the Skeldon facilities.

**Natural Habitats (OP 4.04):** The most significant adverse environmental impact of the SSMP is the conversion of some 8,565 ha of land to sugar cane cultivation, with up to another 2,500 ha for replacement cattle pasture, for a total of about 10,600 ha of land to be cleared and/or drained. Although the forests and wetlands to be cleared and/or drained harbor species of conservation interest such as Jaguars (*Panthera onca*), they do not qualify as Critical Natural Habitats (as per the Natural Habitats OP4.04) or Critical Forests (as per the Forests OP 4.36), since (i) no species depend significantly upon these lands for their global or national survival and (ii) ecologically similar lands are still widespread on the coastal plain of Guyana. Alternative sites of lower environmental sensitivity are not available within an economic transport distance of the Skeldon factory. Similarly, the Manarabisi Pasture (which requires forest clearing and some drainage to be usable as replacement cattle pasture) was found to be the only technically and socially feasible site available for the approximately 7,000 heads of cattle (belonging to farmers from Villages 67-74) that are to be displaced by expanding cane cultivation. Other potential replacement pasture lands would be too far away for these farmers to use without having to
relocate themselves; these other lands would generally also require forest clearing and/or wetland drainage to become usable as pastures.

As ecological compensation for the loss of these non-critical natural habitats, the EMP provides for the long-term conservation of 7,520 ha contained within the Halcrow (6,000 ha) and GUYSUCO (1,520 ha) conservancies. These two conservancies comprise state-owned land under GUYSUCO management; in the case of the Halcrow Conservancy, GUYSUCO’s management responsibilities are outlined in a long-term agreement signed between GUYSUCO and the National Drainage Irrigation Board. Both conservancies serve primarily as water storage areas for nearby sugar cane and other irrigated cultivation, and both comprise relatively natural ecosystems with a mosaic of open water, marsh, freshwater swamp, upland reef forest, and related wetland habitats. Under GUYSUCO’s management, the fundamentally natural character of the Halcrow and GUYSUCO conservancies areas will remain, although there might be some change in the proportions of each habitat type due to (relatively slight) water level changes. To help ensure effective wildlife conservation at both conservancies, the EMP prohibits all hunting and wildlife capture, and restricts fishing to traditional, small-scale activities. GUYSUCO will enforce these restrictions through (i) placement of signs in strategic locations at the conservancy edges; (ii) control of vehicle and pedestrian traffic along the limited access roads that pass through GUYSUCO-managed lands; and (iii) the on-the-ground presence of at least 8 conservancy rangers. GUYSUCO has been requested to provide information on the implementation stage of these measures prior to negotiation of the Emissions Reduction Purchase Agreement (ERPA). GUYSUCO has already carried out a Rapid Biological Assessment (RBA) to obtain baseline data on the animal and plant life of the two conservancies, which will be useful for future monitoring and management activities. The RBA also serves to increase awareness, within Guyana and internationally, of the biodiversity significance of these two conservancies. When adjusted for natural habitat quality, the 7,520 ha within these two conservancies are considered to be of greater conservation value overall than the 10,600 ha to be converted for expanded cane cultivation and replacement cattle pasture. This is because nearly half of the lands to be converted have been previously drained (not in anticipation of the SSMP or CDM projects) and thus fundamentally altered from an ecological standpoint. Also, while the Manarabisi Pasture forest (to be 75% cleared) is already mostly isolated from other forest blocks, the Halcrow Conservancy is contiguous with a larger area of existing forest and natural wetland habitats to the west.

The EMP provides the explicit environmental rules that will be incorporated within the bidding documents for clearing the remaining blocks of land needed for cane cultivation and pasture replacement. These rules require, inter alia, (i) proceeding in a direction (which would vary by block) that facilitates the exit of wild animals towards the remaining areas of natural habitat; (ii) placing temporary log bridges across canals to facilitate the exit of terrestrial wildlife; (iii) no hunting, wildlife capture, nor fishing by contractors and their employees; (iv) no contamination of the canals by solid or liquid wastes; and (v) no washing of machinery in the canals.

**Pest Management (OP 4.09):** While sugarcane cultivation presents pest management challenges, GUYSUCO has years of experience with successful integrated pest management approaches that minimize pesticide use and promote worker safety. GUYSUCO’s current pest
management practices are consistent with the Bank’s Pest Management Policy (PMP). The project’s Environmental Management Plan includes a Pest Management Plan that emphasizes integrated pest management, careful selection of compounds, and safe pesticide use and storage. In addition to following the PMP in its own cane cultivation, GUYSUCO provides free technical assistance in pest management to the adjacent small farmers who are, or will be, producing cane for the new Skeldon factory.

**Forests (OP 4.36):** The wetland habitats within the protected Halcrow and GUYSUCO conservancies, as well as the area to be cleared for expanded cane cultivation, include natural forests (both in the swamps and the upland reef forest stands). Thus, all of the above comments on compliance with the Natural Habitats OP/BP 4.04 apply as well to the Forests OP/BP 4.36. The Guyana Forestry Commission recently surveyed the areas to be cleared for sugarcane expansion and replacement cattle pasture, and found the number of trees of commercial value to be negligible. It should also be noted that there is presently neither logging nor other wood extraction from the Halcrow and GUYSUCO conservancies, nor GUYSUCO will allow any to take place under the EMP.

**Physical Cultural Resources (OP/BP 4.11):** The EIA included a cultural heritage assessment that concluded that no significant historic or prehistoric resources are likely to be found within the proposed expansion area for cane cultivation. Nonetheless, the possibility cannot be ruled out of discovering some items of archaeological interest in the course of land clearing for cane cultivation or pasture expansion. Accordingly, GUYSUCO’s technical specifications for land clearing and canal excavation routinely include the requirement for contractors to report any items of archaeological interest to the Project Manager on duty.

Involuntary Resettlement (OP/BP 4.12): While there is no involuntary resettlement of people in this project, there is a need to relocate the cattle that previously had grazed on Block 2 of the Skeldon Sugar Estate. The Cattle Farmers Association for Villages 67-74 has, for many years, enjoyed customary use of Block 2 with GUYSUCO’s permission to graze their cattle. However, Block 2 has recently been planted with sugarcane as part of the SSMP expansion (since it is contiguous with the other areas of expanded cane cultivation) which means that the farmers are no longer able to graze their cattle there. The issue is now resolved, in that an alternate grazing location has been identified to the satisfaction of the majority of the Cattle Farmers Association. This area is the 7,440 ha Manarabisi Pasture, currently being utilized by the cattle farmers of Villages 52-66, who have agreed in principle to share this land. (Villages 52-66 do have formal title to their grazing lands.) The reason for their willingness to share is that they have been guaranteed continued use of the drained portions of the pasture. The additional rehabilitation work planned for the pasture will further increase the safety and welfare of their cattle, and once drained, the land will be sufficient for all.

The Government (Ministry of Agriculture) and GUYSUCO have agreed to share the cost of undertaking infrastructure work at Manarabisi pasture, to allow all 80-100 farmers from Villages 67-74 (with their approximately 7,000 head of cattle) to move there in phases from 2008 – 2009. These works include:

- Clearing some 2,034 ha currently under secondary forest cover.
• Construction of drainage and navigation canals and empoldering. Primary drainage works will be rehabilitated/upgraded to adequately deal with the additional cleared area and secondary drainage works (internal canals and drains) will be installed to facilitate drainage during the rainy season and to hold drinking water for cattle during the dry season.
• Fencing of the perimeter (currently about 30% is presently fenced).

The total cost of the above works has been estimated at G$268.6 million (US$1.41 million) and will be shared between the Government and GUYSUCO. The participating cattle farmers will, in turn, contribute to construction of fencing and local bridges. Some forest clearance, excavation of drains, and fence erection has already been completed. An agreement will also be negotiated with the Water Users’ Association with regard to the use of access dams and waterways by both rice and cattle farmers in the area.

In accordance with OP 4.12, a Resettlement Action Plan (RAP) has been prepared and publicly disclosed within Guyana and in the Bank’s InfoShop in Washington. As part of project supervision, the Bank will conduct a survey to determine that the farmers’ livelihoods have not been adversely affected by the relocation of their cattle.

**Public disclosure**

Since the conception of the SSMP in 1999, there had been joint consultative meetings with the local community to discuss in detail the environmental and social impacts of the factory project and the role that private farmers and cooperatives would play. In late 2004, GUYSUCO again held consultations on the EIA with local business groups, private farmers and cooperatives, union representatives and government authorities. The EIAs are available locally for public review. GUYSUCO has a record of the outcome of the public consultations.

Bank missions to Guyana were carried out in April and December 2006 to complete the Community Benefits Plan (CBP) required prior to ERPA signature. CDCF will pay an additional amount per contracted ER ($1 per tCO$_2$e) to finance additional benefits as part of the project’s proposed Community Benefits Plan. During Bank Team discussions with GUYSUCO, a number of community benefits were identified: e.g., support to the local hospital and various improvements to the company’s community center; a grass cutter to undertake urban landscaping in public community areas - school playgrounds, religious centers, and parks. GUYSUCO will also allocate part of the carbon revenues to undertake social services in the community:

**10. List of Factual Technical Documents**
* Carbon Finance Document (CFD)

* Feasibility and Costs Assessment of the cogeneration plant

* Project Design Document (PDD) of the Cogeneration Project

* Environmental Impact Assessment for the SSMP and Environmental Management Plan
11. Contact point

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