

**INTEGRATED SAFEGUARDS DATASHEET
APPRAISAL STAGE**

I. Basic Information

Date prepared/updated: 01/26/2007

Report No.: AC2675

1. Basic Project Data

Country: Guyana	Project ID: P103539	
Project Name: Conservancy Adaptation Project		
Task Team Leader: Francis Ghesquiere		
GEF Focal Area: Climate change	Global Supplemental ID:	
Estimated Appraisal Date: January 8, 2007	Estimated Board Date: May 15, 2007	
Managing Unit: LCSUW	Lending Instrument: Specific Investment Loan	
Sector: Flood protection (100%)		
Theme: Natural disaster management (P)		
IBRD Amount (US\$m.):	0.00	
IDA Amount (US\$m.):	0.00	
GEF Amount (US\$m.):	3.80	
PCF Amount (US\$m.):	0.00	
Other financing amounts by source:		
BORROWER/RECIPIENT		0.00
<u>Financing Gap</u>		<u>1.20</u>
1.20		
Environmental Category: B - Partial Assessment		
Simplified Processing	Simple <input type="checkbox"/>	Repeater <input type="checkbox"/>
Is this project processed under OP 8.50 (Emergency Recovery)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

2. Project Objectives

The objective of the CAP is to reduce the vulnerability of catastrophic flooding in Guyana's low-lying coastal area that is currently threatened by sea level rise resulting from global climate change.

This objective will be achieved through a) strengthening the GoG's and donor understanding of the EDWC system and coastal plain drainage regimes while identifying key drainage regimes for follow-on intervention; b) implementing infrastructure investments aimed at increasing the drainage capacity of the EDWC; c) strengthening institutional capacity of the GoG to manage water levels in the EDWC and to guide interventions aimed reducing Guyana's vulnerability to floods.

At project completion, the GoG will be in possession of a master plan for future upgrading of the EDWC. Possible interventions for at least 10 key drainage regimes will be identified and presented to the donor community, and the drainage relief capacity of the EDWC to the Demerara River by will be increased by at least 35 percent.

3. Project Description

The project will finance the development of the technical foundation for a master plan of future interventions within the EDWC and lowland drainage systems, as well as specific upgrading works and operational improvements aimed at enhancing the flood control capacity of the EDWC. The tools developed under the analytical component of the CAP will be used by the GoG and donor agencies to guide future investments.

Component 1 - Pre-investment studies for engineering design of works (Total US\$2.45 mil / GEF portion US\$2.0 mil): The objective of this component is to provide the hydrologic baseline necessary for contemplating rational interventions aimed at increasing the current discharge capacity of the flood control system. The key outcome of these pre-investment studies will be a topographic model of the inhabited coastal plain to be used as the basis for hydrologic analysis of the region under projected climate scenarios. The results from this component will pinpoint key areas of intervention to increase discharge capacity critical for flood zone management. Pre-engineering designs will be completed for a set of prioritized interventions. Specialized staff within the following agencies will be trained in the application of the analytical tools produced: NDIA, the Lands and Surveys Commission, the Ministry of Works River and Sea Defense Division, the Guyana Environmental Protection Agency and the Civil Defense Commission.

Component 2 - Investments in specific adaptation measures (Total US\$17.2 mil / GEF portion US\$1.5 mil): The objective of this component is to counteract the effects of sea level rise, which has decreased the GoG's ability to manage water levels of the EDWC system. The investments will improve the ability of the Government to manage water levels behind the EDWC dam during heavy rains by improving internal water flows in the EDWC and increasing EDWC drainage relief capacity to the Demerara River and eventually the Atlantic Ocean. By the end of project, activities under this component should result in an increased drainage capacity of the EDWC to the Demerara River by roughly 35 percent (the exact figure will be finalized during the first year of implementation). The GoG, through the NDIA, will direct additional investment in the strengthening of drainage and irrigation infrastructure based on the engineering foundation to be developed under Component 1.

Component 3 - Institutional Strengthening and Project Management (Total US\$0.35 mil / GEF portion US\$0.3 mil): The objective of this component is to strengthen the institutional framework for flood control within the context of the national emergency management sector headed by the Civil Defense Commission. The project will finance activities to better assess the current needs of the actors involved in the flood control and emergency management and will work together with the concerned parties to develop a national framework for a more streamlined approach to hazard and risk management in the country. The project will also support consultations with civil society and the donor community to create consensus around a medium and long term intervention strategy to help the country adapt to sea level rise. The key outcome of the analysis and project management component will be improved Government effectiveness in managing floods

and other emergencies. With clear lines of responsibility in times of urgent need as well as times of calm, the GoG will be better equipped to manage flood control policy.

4. Project Location and salient physical characteristics relevant to the safeguard analysis

The project will focus on activities in Region 4, the most populated region of the country. This is the area downstream of the EDWC dam and EDWC system. Mapping and system analysis will be conducted in coastal regions 3, 4 and 5 to provide the analytical basis for managing coastal hydraulology.

5. Environmental and Social Safeguards Specialists

Mr Gerald E. Meier (LCSUW)

6. Safeguard Policies Triggered	Yes	No
Environmental Assessment (OP/BP 4.01)	X	
Natural Habitats (OP/BP 4.04)	X	
Forests (OP/BP 4.36)	X	
Pest Management (OP 4.09)		X
Physical Cultural Resources (OP/BP 4.11)	X	
Indigenous Peoples (OP/BP 4.10)		X
Involuntary Resettlement (OP/BP 4.12)		X
Safety of Dams (OP/BP 4.37)	X	
Projects on International Waterways (OP/BP 7.50)		X
Projects in Disputed Areas (OP/BP 7.60)		X

II. Key Safeguard Policy Issues and Their Management

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts: Environmental Assessment (EA) (OP/BP4.01) :

An environmental management framework will be developed and publicly disclosed through the Infoshop in Washington and within Guyana. This framework includes: a) a description of the project; b) a description of the safeguards triggered and project mechanisms to ensure compliance with each; c) Terms of Reference for analytical work that will result in an engineering tool that is to be used as a foundation for determining the environmental impacts of follow-on interventions; d) procedures and requirements for sub-project specific EAs to be conducted during project implementation; and e) a description of the project's strategy for public consultation, during both project preparation and implementation.

Civil works funded under this project may include the widening of the Cuffy and/or Cuhna outlet structures. These activities will require the construction of a bridge along a major north-south thoroughfare. Environmental impacts will be limited to the construction sites and will result in a temporary impact to local traffic. An Environmental Assessment will be conducted during the engineering design stage of the

project component to address these issues. These two structures lead directly to the Demerara River. The only function of these canals is to provide relief capacity to the EDWC system to protect the EDWC dam during the two rainy annual seasons. These canals are not associated with the irrigation or potable water supply functions of the EDWC system. While not expected to have an adverse impact on conservancy, an additional site-specific EA will be completed for the improvement of water flow systems within the EDWC. Remaining civil works are limited to repairs to existing structures and are classified as category C. These works will be contracted using appropriate environmental management clauses to assure contractor compliance with accepted environmental practices.

A key output of the analytical work will be an engineering tool that is to be used to as a foundation for determining the environmental impacts of follow-on interventions. With the development and use of a detailed digital elevation model, local watershed characteristics and drainage regimes will be mapped and modeled, creating the basis for future engineering interventions. A separate report will be developed, based on the analytical work undertaken in the project, which will specifically addresses the likely environmental impacts of future interventions. Expected hydraulic impacts, as well as changes in water quality, natural habitats, land use, livelihoods and analysis of alternative strategies will be considered. Based on this information, an intervention strategy will be developed.

Natural Habitats (OP/BP 4.04)

A portion of the project takes place within the East Demerara Water Conservancy. This is a man made structure that is considered a natural habitat. No adverse impacts to the conservancy are envisioned under the project. At the same time, by improving the drainage capacity of the EDWC and assessing the weak portion of the EDWC Dam, the project aims to ensure that this natural habitat remains in tact.

Physical Cultural Resources (OP/BP 4.11)

While activities to be carried out under the project are not expected to impact any known cultural heritage sites, technical specifications for works and the Operation Manual will include "chance find procedures" to be followed in the event that culturally significant materials are discovered during the execution of civil works.

Forests (OP/BP 4.36)

The southern portion of the East Demerara Water Conservancy is bordered by a forest. No physical work is envisioned within 10 miles of this forest and no adverse impacts to the forest are envisioned under the project. Moreover, improvements in water flows within the EDWC is expected to have no impact on the bordering forest.

Safety of Dams (OP/BP 4.37)

The EDWC is bordered to the north by a 30 mile long earthen dam constructed some 150 years ago. The dam has been heavily stressed particularly during the past two flood events (2004-5, 2005-6). While no civil works are to be conducted on the dam, a detailed engineering assessment of the dam and its associated drainage structures is to be

completed under the project. This will provide the engineering and safety guidance to the GoG for the design and development of any dam strengthening programs.

The engineering analysis developed under the present project will provide the technical basis for the Government to fulfill the requirements for an expert assessment of the weakened portion of the EDWC Dam provided under this safeguard. Upon receipt of the dam safety assessment, and as part of implementation of the project, the World Bank will contract independent experts to assess and to validate the quality of the report.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

No negative long term impacts are expected to materialize as a result of the project. By improving the drainage capacity of the EDWC and assessing the weak portion of the EDWC Dam, the project aims to ensure that this natural habitat remains in tact.

Contrary to the status quo for drainage management in Guyana, future investments made in the populated coastal lowlands will be made with the knowledge of the environmental impacts of such work. Understanding of local watershed characteristics and drainage regimes, better informed investments can be made in the coming years.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

The project is expected to have no adverse impacts.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described. While four safeguards are triggered under this project, only two will need to be addressed in depth. The man-made natural habitat of the EDWC will benefit from the project through the increased discharge capacity of the system. This will reduce the risk of a dam breach that would negatively affect the natural habitat. A forest does border the southern portion of the EDWC, but because investments will be made nowhere in the proximity of the forest, the project will have neither negative nor positive impacts. The sites of physical work to take place under the project have been surveyed by Bank technical staff. Based on their assessment, the likelihood of cultural resources to be found at the project sites is extremely low. However, "chance find" procedures will be included in the contract for this work.

Regarding the environmental assessment the engineering firm contracting to carry out the analytical work will be responsible for developing site specific environmental assessments for the widening of outlet canals and improvement in water flows behind the EDWC. Additionally, their work program will include a separate report on the possible environmental impacts of future drainage sector improvements. Both the engineering firm and the Implementation Secretariat will be responsible for ensuring that these measures are following during physical work.

Safety of Dams will also be addressed by the engineering firm. The firm will be responsible for completing the dam safety analysis and proposing short and medium term interventions aimed at strengthening the dam. The Implementation Secretariat will ensure that these outputs are complete and will be supported with technical expertise provided by the World Bank.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people. Relief Drainage Improvements The primary beneficiaries' population located to the north of the EDWC dam as the improved relief capacity will reduce the risk of catastrophic dam failure and subsequent flooding. This area represents over 70 percent of the countries population, local authorities, and local civil society that have been closely involved in the development of the proposed strategy. If the improvement of the Cuhna canal is to be considered, the Barama Lumber Company is the only activity directly affected by the works. Additionally, Ministry of Works will be closely involved with any constructions associated with the north-south roadway.

B. Disclosure Requirements Date

Environmental Assessment/Audit/Management Plan/Other:

Date of receipt by the Bank	01/12/2007
Date of "in-country" disclosure	01/24/2007
Date of submission to InfoShop	01/24/2007
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	

*** If the project triggers the Pest Management and/or Physical Cultural Resources, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.**

If in-country disclosure of any of the above documents is not expected, please explain why:

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)

OP/BP/GP 4.01 - Environment Assessment

Does the project require a stand-alone EA (including EMP) report?	Yes
If yes, then did the Regional Environment Unit or Sector Manager (SM) review and approve the EA report?	Yes
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes

OP/BP 4.04 - Natural Habitats

Would the project result in any significant conversion or degradation of critical natural habitats?	No
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If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank? N/A

OP/BP 4.11 - Physical Cultural Resources

Does the EA include adequate measures related to cultural property? Yes

Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property? Yes

OP/BP 4.36 - Forests

Has the sector-wide analysis of policy and institutional issues and constraints been carried out? N/A

Does the project design include satisfactory measures to overcome these constraints? N/A

Does the project finance commercial harvesting, and if so, does it include provisions for certification system? No

OP/BP 4.37 - Safety of Dams

Have dam safety plans been prepared? No

Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank? No

Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training? Yes

The World Bank Policy on Disclosure of Information

Have relevant safeguard policies documents been sent to the World Bank's Infoshop? No

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs? No

All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies? Yes

Have costs related to safeguard policy measures been included in the project cost? Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies? Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents? No

D. Approvals

<i>Signed and submitted by:</i>	<i>Name</i>	<i>Date</i>
Task Team Leader:	Mr Francis Ghesquiere	
Environmental Specialist:	Mr Gerald E. Meier	
Social Development Specialist		
Additional Environmental and/or		
Social Development Specialist(s):		
<i>Approved by:</i>		
Sector Manager:	Mr John Henry Stein	
Comments:		