

**INTEGRATED SAFEGUARDS DATA SHEET  
APPRAISAL STAGE**

**Report No.: ISDSA7948**

**Date ISDS Prepared/Updated:** 10-Apr-2014

**Date ISDS Approved/Disclosed:** 10-Apr-2014

**I. BASIC INFORMATION**

**1. Basic Project Data**

<b>Country:</b>	Guyana	<b>Project ID:</b>	P147250
<b>Project Name:</b>	GY Flood Risk Management (P147250)		
<b>Task Team Leader:</b>	John Morton		
<b>Estimated Appraisal Date:</b>	01-Apr-2014	<b>Estimated Board Date:</b>	20-May-2014
<b>Managing Unit:</b>	LCSDU	<b>Lending Instrument:</b>	Investment Project Financing
<b>Sector(s):</b>	Flood protection (100%)		
<b>Theme(s):</b>	Urban planning and housing policy (60%), Climate change (20%), Water resource management (20%)		
<b>Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)?</b>			No
<b>Financing (In USD Million)</b>			
Total Project Cost:	11.89	Total Bank Financing:	11.89
Financing Gap:	0.00		
<b>Financing Source</b>			<b>Amount</b>
BORROWER/RECIPIENT			0.00
International Development Association (IDA)			11.89
Total			11.89
<b>Environmental Category:</b>	B - Partial Assessment		
<b>Is this a Repeater project?</b>	No		

**2. Project Development Objective(s)**

The objective of the project is to reduce the risk of flooding in the low-lying areas of the East Demerara.

**3. Project Description**

Guyana has a land area of 215,000 square kilometers (83,000 square miles) and a low population

density, with ninety percent of its 762,300 inhabitants living on the narrow coastal plain, which represents ten percent of the country's area. This is an area of reclaimed lands, much of which lies below sea level. It is crucial to the economy of the country, supporting the majority of the population including the nation's capital, Georgetown, and agricultural areas that account for approximately 27 percent of the nation's GDP.

In addition to hosting the majority of the population and providing land for most of the country's agricultural activities, these areas are flood-prone, making the national economy susceptible to the impacts of the country's high seasonal rainfall and storm events. In January 2005 extreme rainfall caused widespread flooding in the coastal lowlands resulting in an estimated US\$465 million in damages, which amounted to 59% of Guyana's GDP at the time. Other more recent severe rainfall events (e.g. February 2006, December 2008; January 2009; February 2011; January 2012) have caused economic and livelihood loss, which further highlighted the importance of reducing Guyana's vulnerability to flooding to foster shared prosperity as an engine for equitable economic growth, job creation and poverty reduction.

The Project provides investments and institutional strengthening to reduce the risk of flooding. It is composed of 3 components: 1. Priority Works for Flood Risk Reduction; 2. Institutional Strengthening for Flood Risk Reduction; and 3. Project Management.

Component 1: Priority Works for Flood Risk Reduction (USD 10.4 million). This component will include works and equipment for upgrading and reconstruction of critical parts of the EDWC dam and improving the east coast drainage system. The component will also finance construction supervision and quality assurance for all works. The dam upgrading will include re-enforcing and upgrading critical sections of the northeast EDWC dam through purchase of heavy machinery (excavators) to upgrade and maintain the dam; and contracting of works for upgrading the critical portions of the dam. Investment in the east coast drainage area will focus on improvements in one or more of the 6 priority drainage areas (the identified drainage areas include: Liliendaal; Montrose-Spendaam; Mon Repos-Annandale; Strathspey Enterprise Paradise; and Beehive Clonbrook all of which are located east of Georgetown along the coast). A set of priority investments in those areas has been identified under the CAP and includes works and equipment to improve pumping capacity, upgrading and constructing culverts, widening and upgrading channels and separating urban and agricultural drainage systems. During implementation, the specific interventions to be implemented under this Project will be identified by the Bank and GoG from this priority list and in the context of the GoG's strategic planning process being finalized through the Master Plan for Drainage and Irrigation.

Component 2: Institutional Strengthening (USD 0.3 million) This component will support MoA in the execution of their responsibilities under the project. In particular it will finance institutional strengthening to improve EDWC dam maintenance and management, including updating operation and maintenance procedures; improving instrumentation for surveillance and forecasting; and developing emergency preparedness procedures. It will also provide training and technical support to flood modelling and support project communication and dissemination activities.

Component 3: Project Management and Implementation Support (USD 1.2 million IDA) This component will finance the provision of support to the Project Implementation Unit (PIU) under the Agriculture Sector Development Unit (ASDU), including hiring of specialized staff; preparation of designs and tender documents; monitoring and evaluation; contract supervision; reporting and auditing; environmental and social safeguards and training.

#### 4. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

Guyana's Region 4 (see Project Map) is an area of 1,843 square kilometers (711 square miles) with its population living predominantly on coastal reclaimed lands that are bound to the north by the Atlantic Ocean, to the west by the Demerara River and to the east by the Mahaica River and Region 5. The reclaimed lands are supported by a flood protection system that consists of a seawall along the Atlantic Ocean that prevents the sea from inundating the area, and an inland water reservoir that is dammed on three sides. The dam parallels the Mahaica River, the Atlantic Ocean and the Demerara River and prevents storm water from the inland area from entering the reclaimed coastal land. The reservoir - referred to as the East Demerara Water Conservancy (EDWC) - is a large, shallow water storage system with a catchment area of 571 square kilometers (220 square miles). In addition to flood control, the EDWC provides agricultural lands (rice and sugar production especially) and urban areas with irrigation and drinking water.

#### 5. Environmental and Social Safeguards Specialists

Noreen Beg (LCSEN)

M. Yaa Pokua Afriyie Oppong (LCSSO)

6. Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/ BP 4.01	Yes	<p>The Project is a category B - Partial Assessment - assigned to projects that are likely to have localized, limited and reversible environmental impacts. Overall the Project will have a largely positive social and environmental (health and safety) impact through its role in reducing vulnerability to flooding.</p> <p>Physical interventions resulting from the implementation of investments could have low to moderate negative environmental impacts. The most significant impacts will result from the construction and rehabilitation works (back-filling, excavation, earth-moving, dredging). Impacts to the biophysical and socio-economic environments are expected to be limited in nature, as much of the EDWC Dam and Drainage System, and the east coast drainage system are located in areas that have been subjected to significant human interventions. Nevertheless, care will be taken to schedule civil works to avoid key breeding and nesting periods. All construction sites and embankments will be rehabilitated and re-vegetated with native shrubs and trees after works are completed.</p> <p>Given that the project may affect roads and bridges, road safety measures and traffic</p>

		<p>diversion plans will be adopted, and any construction waste will be disposed of appropriately</p> <p>Given that the specific nature and location of all components is not going to be definitively determined prior to appraisal, a framework approach has been adopted. An Environmental and Social Management Framework (ESMF) has been prepared, which includes an environmental baseline, a screening process for further investments, and proposed mitigation measures. An EA for the first year's investments (the rehabilitation of the EDWC dam) was completed and was disclosed on March 18, 2014. The ESMF has consulted on, and disclosed prior to project appraisal.</p>
Natural Habitats OP/BP 4.04	Yes	<p>Appropriate mitigation measures will be followed to limit the impact on local fauna, and avi-fauna to protect indigenous plant and tree species, and preserve the Demerara and Mahaica riverine ecosystems. Although the EDWC is a man-made structure, is not a Protected Area, nor a critical natural habitat, it serves as habitat to caiman, giant otters, and bats. Numerous species of birds also nest in or migrate through the EDWC, including Muscovy Ducks, Blue-winged Teal, Pied-billed Grebes, Cormorants, Stripe-backed Bitterns, Egrets, Vultures, Snail Kites, and Great Kiskadees. Nevertheless, given the vast area of the uninhabited EDWC, the localized and short-term works proposed will not significantly affect fauna and avi-fauna, as there is adequate refuge for these species away from project works. Moreover, the proposed project will not result in significant degradation or conversion of natural habitats, given that the works are limited to upgrading and rehabilitation of existing structures. Care will be taken to schedule civil works to avoid key breeding and nesting periods. All construction sites and embankments will be rehabilitated and re-vegetated with native shrubs and trees after works are completed. The Guyana Amazon Tropical Birds Society and the Environmental Protection Agency confirmed during preparation that, in their opinion, the EDWC has been sustainably managed.</p>

Forests OP/BP 4.36	No	It is not expected that Project investments would affect the management of forests, the use of forests for livelihoods or would support investments such as plantations or other industrial uses. As such, OP/BP 4.36 will not be triggered. The ESMF will explicitly forbid any project activities that would lead to the destruction, degradation or conversion of forests and key forest ecosystems.
Pest Management OP 4.09	No	The Project will not finance any activities that would result in procurement or significant use of pesticides. All vegetation clearing activities will be undertaken manually or mechanically.
Physical Cultural Resources OP/BP 4.11	Yes	The project is not expected to have negative impacts on cultural property. However, “chance finds” during implementation of activities could be possible. Chance finds procedures will be incorporated into EMPs and construction contracts.
Indigenous Peoples OP/BP 4.10	No	The Indigenous Peoples Policy (OP/BP 4.10) is not triggered by this project. The Project will be implemented along the Coastal zone of Region 4 and the majority of the country’s Amerindian population resides in the Hinterland Regions. There is one Amerindian community, St. Cuthbert’s mission, located upstream of the Lama and Maduni Sluices along the Mahaica River. However this community is distant from the project areas and no works will be undertaken near this community and no impacts are expected.
Involuntary Resettlement OP/BP 4.12	Yes	<p>Given the potential for land acquisition (temporary and permanent) as well as impacts on assets, for works of this nature, the Involuntary Resettlement Policy (OP/BP 4.12) has been triggered.</p> <p>A Resettlement Policy framework (RPF) has been prepared to allow application of the OP 4.12 policy requirements. The RPF clarifies resettlement objectives and principles, organizational arrangements and funding mechanisms for any resettlement activity that may be necessary during project implementation.</p> <p>Any impacts are likely to be limited and sub-project level Resettlement Plans will be</p>

		developed and disclosed prior to sub-project financing. The RPF was disclosed on March 18, 2014.
Safety of Dams OP/BP 4.37	Yes	<p>OP/BP 4.37 – Safety of Dams is triggered by the project. The embankment dams for the EDWC are all significantly less than 10 meters in height, however, because the EDWC has an extensive surface area; provides water and protects a significant population from flooding; is adjacent to natural habitats along the adjoining rivers; and there is a risk of significant adverse impacts due to potential failure of the dam on local communities and assets, the policy was triggered under the project.</p> <p>An evaluation of the EDWC dams was undertaken covering the safety status, performance history and operation and maintenance procedures. Necessary remedial work and safety-related measures were identified in order to upgrade the safety status of the dam including immediate priority works on the northeast dam for which the Project will be providing financing.</p> <p>The task team has agreed on appropriate safety measures with the Borrower. The works will be undertaken by qualified engineers with experience in these types of works and the construction quality, cost and time control will be supervised by qualified engineers.</p> <p>In order to ensure the works quality of the rehabilitation of the EDWC northeast dam and sustainability of all EDWC dams, the following plans will be prepared/improved and/or implemented: (a) a Plan for construction supervision and quality assurance will be prepared as part of the specifications for bidding of the construction and the supervision of the dam works and will be ready before construction starts; (b) an Operation, Maintenance and Surveillance (OMS) Plan exists and will be refined and updated before bidding of the works; (c) an Instrumentation Plan will be elaborated before bidding of the works and included as part of the construction technical specifications; and (d) an Emergency Preparedness Plan (EPP) will be developed during Project implementation.</p>

Projects on International Waterways OP/BP 7.50	No	Both the Demerara and Mahaica rivers originate in Guyana, and a third canal drains directly into the Atlantic Ocean, so OP 7.50, Projects on International Waterways, is not triggered.
Projects in Disputed Areas OP/BP 7.60	No	

## II. Key Safeguard Policy Issues and Their Management

### A. Summary of Key Safeguard Issues

<p><b>1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:</b></p> <p>There are no potential large-scale, significant and/or irreversible environmental impacts associated with the proposed project works. The Project will have a largely positive social and environmental (health and safety) impact. Benefits that will accrue from the flood risk reduction investments include: reduced risk of flood damage to infrastructure, agricultural land, residential and commercial property; and reduced mortality and morbidity arising from flooding.</p> <p>Although the EDWC is a man-made structure, it serves as a habitat to caiman, giant otters, and bats and numerous species of birds nest in or migrate through the EDWC, including Muscovy Ducks, Blue-winged Teal, Pied-billed Grebes, Cormorants, Stripe-backed Bitterns, Egrets, Vultures, Snail Kites, and Great Kiskadees. Given the vast uninhabited area of the EDWC, the localized and short – term works proposed will not significantly affect fauna and avi-fauna, as there are areas away from the project works that provide refuge to these species. Moreover, the proposed project will not result in significant degradation or conversion of natural habitats, given that the works are limited to the upgrading and rehabilitation of existing structures. Care will be taken to schedule civil works to avoid key breeding and nesting periods. All construction sites will be rehabilitated and re-vegetated with native shrubs and trees. Re-vegetation will be undertaken along embankments and contiguous areas after works are completed.</p> <p>Temporary or permanent land acquisition is a possibility and impacts will be mitigated in accordance with the project’s Resettlement Policy Framework.</p>
<p><b>2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:</b></p> <p>There are no long term indirect impacts as a result of this project.</p>
<p><b>3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.</b></p> <p>Given the importance of the EDWC in flood vulnerability reduction, there are no appropriate project alternatives.</p>
<p><b>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.</b></p> <p>Given that the specific nature and location of all components is not going to be determined prior to appraisal, a framework approach has been adopted. An Environmental and Social Management Framework (ESMF) has been prepared as well as a Resettlement Policy Framework (RPF). The former includes an environmental baseline, a screening process for further investments, and proposed mitigation measures. An EA and EMP has been prepared for the first year’s investments</p>

(EDWC dam rehabilitation) and will be disclosed prior to project appraisal.

As subprojects are finalized, the following process will be undertaken: For each of the subprojects, screening will be undertaken based on an analysis of impacts, World Bank safeguards policies and Guyana National Legislation. On that basis requirements for an Environmental Impact Assessment (EIA) and/or an Environmental Management Plan (EMP) and Resettlement Action Plan (RAP) will be identified. After screening of the subproject, the EMP, EIA and/or RAP will be prepared in order to analyze and develop mitigation measures for any impacts identified. In addition to the issuance of the environmental permit by the EPA, the ASDU will be in charge of assessing whether the draft EIA/EMP responds adequately to the requirements of this framework. The World Bank will undertake review of the implementation of the framework including the quality of the EMPs as part of the regular supervision. The applicable mitigation measures identified in the EIAs/EMP(s) will be incorporated into the bidding and contract documents. ASDU and the contracted construction supervisor will supervise the implementation of the provisions related to the mitigation measures. RAPs will be implemented by the MoA. Projects will commence works only after sub-project RAPs have been cleared by the Bank and compensation has been paid.

Management and/or mitigation of the potential environmental and social impacts will be implemented by contractors and monitored by ASDU. Technical staff from the NDIA and ASDU will be assigned to the Project to oversee the implementation of the Resettlement Policy Framework and to supervise activities carried out during preparation and implementation of the civil works.

Capacity to prepare safeguards documentation and adequately report on safeguards implementation is acknowledged to be limited. However, surveys of ongoing works during preparation indicated that appropriate environmental mitigation measures are largely followed. The Guyana Amazon Tropical Birds Society and the Environmental Protection Agency also confirmed during preparation that, in their opinion, the Conservancy Dam has been sustainably managed.

**5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.**

Key stakeholders include the residential, commercial, and industrial communities in the vicinity of the drainage systems; local environmental NGOs such as Conservation International and the Tropical Birds Society; the Environmental Protection Agency; and relevant line ministries. Consultations on the ESMF were held with concerned stakeholders on March 7th, 2014. Minutes of these consultations are incorporated into the ESMF, along with any suggested revisions to the ESMF, as appropriate. Thereafter, the ESMF was disclosed in the Infoshop and on the Ministry of Agriculture's website prior to the start of appraisal.

***B. Disclosure Requirements***

<b>Environmental Assessment/Audit/Management Plan/Other</b>	
Date of receipt by the Bank	11-Mar-2014
Date of submission to InfoShop	18-Mar-2014
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	

"In country" Disclosure	
Guyana	31-Mar-2014
<i>Comments:</i>	
<b>Resettlement Action Plan/Framework/Policy Process</b>	
Date of receipt by the Bank	11-Mar-2014
Date of submission to InfoShop	18-Mar-2014
"In country" Disclosure	
Guyana	25-Mar-2014
<i>Comments:</i>	
<b>If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.</b>	
<b>If in-country disclosure of any of the above documents is not expected, please explain why:</b>	

### ***C. Compliance Monitoring Indicators at the Corporate Level***

<b>OP/BP/GP 4.01 - Environment Assessment</b>	
Does the project require a stand-alone EA (including EMP) report?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
If yes, then did the Regional Environment Unit or Sector Manager (SM) review and approve the EA report?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>OP/BP 4.04 - Natural Habitats</b>	
Would the project result in any significant conversion or degradation of critical natural habitats?	Yes [ <input type="checkbox"/> ] No [ <input checked="" type="checkbox"/> ] NA [ <input type="checkbox"/> ]
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?	Yes [ <input type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>OP/BP 4.11 - Physical Cultural Resources</b>	
Does the EA include adequate measures related to cultural property?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>OP/BP 4.12 - Involuntary Resettlement</b>	
Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
If yes, then did the Regional unit responsible for safeguards or Sector Manager review the plan?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>OP/BP 4.37 - Safety of Dams</b>	
Have dam safety plans been prepared?	Yes [ <input type="checkbox"/> ] No [ <input checked="" type="checkbox"/> ] NA [ <input type="checkbox"/> ]

Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank?	Yes [ <input type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input checked="" type="checkbox"/> ]
Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training?	Yes [ <input type="checkbox"/> ] No [ <input checked="" type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>The World Bank Policy on Disclosure of Information</b>	
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
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?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
<b>All Safeguard Policies</b>	
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have costs related to safeguard policy measures been included in the project cost?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes [ <input checked="" type="checkbox"/> ] No [ <input type="checkbox"/> ] NA [ <input type="checkbox"/> ]

### III. APPROVALS

Task Team Leader:	Name: John Morton	
<b><i>Approved By</i></b>		
Sector Manager:	Name: Niels B. Holm-Nielsen (SM)	Date: 10-Apr-2014