

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

GUYANA

MEASUREMENT OF CLIMATE CHANGE IMPACTS AND ECO-SYSTEM SERVICES IN IWOKRAMA

(GY-T1069)

PLAN OF OPERATIONS

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PROGRAM RELATED RESOURCES

For the IADB's ongoing activities and data on energy efficiency, renewable energies, and poverty reduction, please visit:

<http://www.iadb.org/secci/>

and

<http://www.iadb.org/topics/topic.cfm?id=PORE&lang=en>

BASIC SOCIOECONOMIC DATA

For basic socioeconomic data, including public debt information, please refer to the following address:

<http://www.iadb.org/RES/index.cfm?fuseaction=externallinks.countrydata>

ABBREVIATIONS

FSC	Forest Stewardship Council
GFC	Guyana Forestry Commission
GOG	The Government of Guyana
IADB	Inter-American Development Bank
IIC	Iwokrama International Rainforest Centre
ISC	Iwokrama Science Committee
LAC	Latin America and the Caribbean
MoU	Memorandum of Understanding
NCC	National Climate Committee
NGO	Non-Governmental Organization
NRDDB	North Rupununi District Development Board
OECD	Organization for Economic Cooperation and Development
PES	Payment for Ecosystem Services
PP	Project Proposal
REDD	Reduced Emissions from Deforestation and Degradation
SECCI	Sustainable Energy and Climate Change Initiative
SME	Small and Medium Enterprises
TC	Technical Cooperation
TOR	Terms of Reference

PLAN OF OPERATIONS

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(GY-T1069)

I. EXECUTIVE SUMMARY

Beneficiary:	Guyana
Project team:	Team leader: Tadashi Shimizu (INE/ECC), Co-Team leader: Sybille Nuenninghoff (CGY/RND); Members: Eirivelthon Lima (INE/RND); Alfred Grünwaldt (INE/ECC); Sandra Valencia (INE/ECC); Roman Payo (INE/ECC); Ernani Pilla (VPS/ESG); Diego Buchara (LEG/SGO)
Executing agency:	The Bank, through Sustainable Energy and Climate Change Unit (INE/ECC).
Financing:	US\$
	SECCI MSC FUND 229,500
	Counterpart 57,375
	Total 286,875
Objectives:	The objective of the project is to contribute to the long-term effort of Guyana in the formulation and establishment of a science-based research Programme for the Iwokrama forest. Activities under said Programme are aimed at reducing Iwokrama's vulnerability to climate change, while demonstrating how forests such as Iwokrama can continue to be used in a sustainable way to generate income for government and local communities, whose livelihoods depend on the forest.
Execution timetable:	As of project approval: Execution period: 12 months Disbursement period: 15 months
Special contractual conditions:	None
Exceptions to Bank Policies and Procedures:	N/A

Environmental and social review:	No negative environmental and social impact has been identified from this regional technical cooperation. This technical cooperation is a category "C" project according to email from ESR dated March 16, 2009.
Coordination with Other Donors:	N/A

II. BACKGROUND AND JUSTIFICATION

A. Background

- 2.1 Guyana is a natural-resource-wealthy commodity-based small economy, covering an area of 215,000 square kilometers and with a population of about 763,000 inhabitants (2007 estimates). Because of a high emigration rate, recent population growth has been marginal. While 90 percent of the population lives along the low-lying coastal belt of Atlantic Ocean, pristine tropical forests cover over 85 percent of the country.
- 2.2 It has been long recognized that, how tropical forest countries such as Guyana and the developed countries can act immediately to slow down deforestation and aligning national and global interest is one of the best long-term solution to deforestation. The Government of Guyana (GOG) has developed national objectives and plans to position Guyana as a leader in climate change mitigation and adaptation.
- 2.3 This TC seeks to start a multi-step process of designing a coherent and robust scientific program for Iwokrama to be lead and coordinated by the Iwokrama International Rainforest Centre (IIC). Specifically, the proposed project is a first step in developing a science-based research Programme to reduce vulnerability to climate change at a local level through: (i) the measurement of key impacts of climate change on areas of the Iwokrama forest under different management regimes and (ii) the design of a mechanism for adaptation and resilience to climate change. Linkage of such results to the long-term valuation of ecosystem services from the forest and the design of financial instruments for their modernization will be crucial for IIC mission, which is summarized as follows: a) the sustainable management and conservation of the Iwokrama forest, b) assisting with the sustainable management of Guyana's larger forest estate as those throughout the wider Guyana Shield, c) International development of models and policy for sustainable management of forest.
- 2.4 The challenges and issues that IIC face with are very different today from when it was established in 1996 under the Iwokrama International Centre for Rain Forest Conservation and Development Act. IIC has a sustainable forestry timber operation, a viable eco-tourism operation, provides training and has recently struck a deal with a private entity to develop ecosystem services and take these to market. All of these changes have taken place at a time when the issue of climate change has risen inextricably.

- 2.5 As stated in Guyana's Climate Change Action Plan¹, climate change is expected to impact the forestry sector, one of Guyana's key economic sectors. Guyana's national circumstances are unique among tropical forest countries due to the far lower than average historical deforestation rates and resulting carbon emissions. Understanding the financial and legal responsibilities and options, Guyana can be the global leader in pioneering an economic development path to reduce carbon emissions rather than the environmentally destructive programs in the forest areas².
- 2.6 The proposed project will be executed by the Bank in coordination with its local office in Guyana. Local consultants or institutions will be hired by the Bank to develop activities under components 1 to 4, which will be also coordinated with the National Climate Committee (NCC) and the Guyana Forestry Commission (GFC) to generate synergies with other national and international initiatives.

B. Bank Strategy

- 2.7 Support for the proposed TC is consistent with Bank Strategies, especially with: (i) the Strategy on Sustainable Energy and Climate Change (SECCI Strategy) (GN -2435 -6) and (ii) the Strategy for employment, poverty reduction and social development (GN-2426). The proposed program particularly supports the emphasis of these strategies on: (i) mitigation; and (ii) adaptation to climate change. The search of innovative eco-system services is in line with 2.9, 2.10, 2.11, 2.12, 2.13, 4.4, and 4.5 of the SECCI Strategy which states the opportunities for supporting carbon markets and reduction of vulnerability to climate change.

C. Coordination with other entities

- 2.8 In order to create synergies and maximize the use of resources, the proposed project will be coordinated with other similar and related projects lead by the National Climate Committee (NCC) and the Guyana Forestry Commission (GFC). Moreover, activities under Guyana's climate change action plan are central to the development agenda, thus IDB is already supporting the government through projects in the area of Reduced Emissions from Deforestation and Degradation (REDD) identified as key activity for the country.

D. The experience of the Bank

- 2.9 The Bank has extensive experience supporting climate change initiatives and natural resource management that have a deep impact on people's daily life in Guyana and is well prepared for the purpose of this TC. The project is in line with the Guyana's National Development Framework and with the on-going TCs of the Bank such as 'Climate change and biodiversity mainstreaming through avoided deforestation – Guyana case study' (GY-T1058) and 'REDD: Regional Policy and Strategic Dialogue (GY-T1068)'. This project also benefits from on-going project through the Multilateral Investment Fund (MIF) called 'Sustainable Forestry in Protected Areas' (GY-M1007).

¹ http://www.hydromet.gov.gy/documents/Guyana_Climate_Change_Action_Plan.pdf

² Office of the President, Republic of Guyana (2008) 'Creating Incentives to Avoid Deforestation ' McKinsey & Company. p.33

III. THE PROGRAM

A. Objectives

- 3.1 The objective of the project is to contribute to the long-term effort of Guyana in the formulation and establishment of a science-based research Programme for the Iwokrama forest. Activities under said Programme are aimed at reducing Iwokrama's vulnerability to climate change, while demonstrating how forests such as Iwokrama can continue to be used in a sustainable way to generate income for government and local communities, whose livelihoods depend on the forest.
- 3.2 The TC through its four components will support the development of a series of activities including: i) Re-assessment of existing data collected over the past 12 years and the identification of gaps in these data; ii) Commencement of the collection of new and extra data; iii) First steps in a new and comprehensive long-term monitoring Programme to measure the impact on Iwokrama of climate change and the impact of current programmes of sustainable use in different areas of the Iwokrama forest under different management regimes; and iv) the institution of mechanisms for the international dissemination of research outcomes and lessons learnt.

B. Description of Project Activities

This TC consists of the following four components:

- 3.3 Component 1: Building capacity to assess impacts of and vulnerability to climate variability and change (Total cost: US\$ 145,875)
- 3.4 This component is aimed at generating required capacity to design the science-based research program to be lead by IIC. Specifically, the component will support:
 - (i) The establishment of a Science Committee at IIC that will design a credible research Programme for the Iwokrama forest that addresses the questions at the very core of sustainable forestry management, climate change and payments for ecosystem services. Specifically, the TC under this sub-component will finance a field visit and establishment event, in which representatives from the science advisory board at IIC and its Executive members will inaugurate the Iwokrama Science Committee (ISC) at Board of Trustees Meeting in Georgetown, Guyana to be held early 2009.
 - (ii) The identification, recruitment and assignment of a resident Science Coordinator (SC). The identified candidate will have an advanced post-doc level to start early 2009, initially on a 12 month contract. SC will be responsible for coordinating and delivering a cross-disciplinary science program on the ground, as defined by the Iwokrama Science Committee (ISC). The SC will act as a focal point and interface between the ISC and the staff of IIC, and local communities (see ANNEX IV for details).
- 3.5 The expected outputs of this component are: (i) an officially established Science Committee at IIC and (ii) a new recruited resident SC.

- 3.6 Component 2: Review and analysis of existing relevant information in the context of climate change (Total cost: US\$ 14,000)
- 3.7 This component will support the following activities: (i) a literature review and database survey, including activities such as: a) collation of an up to date data archive for Iwokrama and the wider region followed by gap analysis; b) short working visit to Iwokrama and other locations where relevant data are stored in the 'grey' literature (internal reports, non-published thesis), c) identification of key experts on climate research on tropical forests and on sustainable forestry management, and (ii) an analysis of existing and available hydro-meteorological data, including: a) collation of existing global and regional climate data sets; b) assessment of data quality and gaps, and preliminary analysis of rainfall trends, seasonal and spatial patterns.
- 3.8 The anticipated outputs of this component are: 1) an installed integrated database for Iwokrama, 2) a list of key experts identified, 3) a comprehensive database of regional climate, data quality and gaps identified and preliminary analysis completed to provide framework for other future activities aimed at quantifying climate change impacts in the forest. Such impacts could include:
- a. Increases in the incidence and extent of natural fires as forests dry-out.
 - b. Shifts in the ranges of forest indigenous flora and fauna to areas of different forest type, or no forest at all.
 - c. Invasion of non-forest species of flora and fauna.
 - d. Fragmentation of large, continuous forest areas.
- 3.9 Component 3: Developing tools to assess impacts of climate variability and change on Iwokrama forest including its water sources. (Total cost: US\$ 71,000)
- 3.10 This component will support monitoring and field work activities that will generate information to assess climate impacts on the Iwokrama forest. Specifically:
- (i) The implementation of initial climate and hydrology monitoring equipment in the field.
 - (ii) The identification of representative work stations in the forest and instrumentation of catchments for monitoring of local climate and hydrology, and assessment of water and soil quality using geochemical analyses. Four tentative stream locations have been already identified within the wilderness preserve and the Sustainable Use Area.
 - (iii) The mapping of vegetation, soil type, below ground carbon stock, and fire abundance and distribution.
 - (iv) Initial assessment of biodiversity and climate change indicators
- 3.11 Activities to be carried out under this component are of utmost importance given they will provide information that will lead to the determination of future management-actions (Payment for Ecosystem Services) to guarantee the sustainability of the forest in light of climate change. The combinations of climate, topography and soil mean that the tropical forests of the Guiana shield are, in general, low in productivity and therefore likely to be particularly

vulnerable to the consequences of climate change. Changes to precipitation and water-table levels and the knock-on effects on soil moisture, seedling germination, sapling growth and canopy recovery after forestry operations should be particular priorities in order to assess the suitability of the plan parameters indicated above.

- 3.12 The anticipated outputs of this component are: (i) field data collection stations installed and long-term instrumentation and monitoring programme designed, (ii) electronic station map with indication of monitoring setup, (iii) GIS database and electronic map of individual proxies for selected bio-physical variables
- 3.13 Component 4: Public outreach (Total cost: US\$ 5,000)
- 3.14 This component will support activities aimed at disseminating results and on-going activities at Iwokrama. Specifically, the component will provide funding for the design, scripting and production of a travelling display on the work of IIC and partners, relating to climate change. These tools will contribute towards the IIC strategy for looking into new partnering options and leverage additional funding for the whole Science Programme. Additionally, the component will finance activities aimed at identifying local communities educational needs in the field of eco/heritage tourism, including a skills-audit and surveys of additional training needs.
- 3.15 The expected outputs of this component are: (i) production of a traveling display and (ii) information collected in relation to local communities training needs for eco/heritage tourism.

IV. Cost and Financing

A. Description and sources of funding

- 4.1 The total cost of TC will be US\$ 286,875 of which \$229,500 (80%) will be financed by the Bank's SECCI Multi Donor Trust Fund (MSC) on a non-reimbursement basis, and \$57,375 (20%) will be financed by the Iwokrama International Rainforest Centre (IIC) which will be in kind.

B. Budget table

- 4.2 Program resources will be allocated to the following estimated budget.

Table 1 - Summary of Costs (US\$)			
Componentes- Activity	SECCI Fund	Counterpart	Total US\$
Component 1. Building capacity to assess impacts of an vulnerability to climate variability and change	125,000	20,875	145,875
Component 2. Review and analysis of existing relevant information in the context of climate change	13,000	1,000	14,000
Component 3. Developing tools to assess impacts of climate variability and change on Iwokrama forest including its water resources	61,000	10,000	71,000
Component 4. Public outreach	5,000	-	5,000
Total costs	204,000	31,875	235,875
Contingency	20,400	-	20,400
Administration costs	5,100	25,500	30,600
Overall Costs	229,500	57,375	286,875

V. Program Execution

A. Program execution and administration

- 5.1 This TC will be executed by the IDB through the Sustainable Energy and Climate Change Unit (ECC) in coordination with the Bank's local office in Guyana. The Bank is executing the TC, given that IIC identified institutional capacity to administer the funds is limited. This will also mitigate risks related to project execution (please see par. 7.3). ECC will lead the project and will be in charge of carrying out any procurement activity related to the project with direct guidance and support of INE procurement specialists located in headquarters or the field as required.

B. Technical and Basic Responsibility

- 5.2 ECC and project team members will be responsible for the technical and operational aspects of activities under this TC and will coordinate with the country office in Guyana in relation to other similar activities with which synergies could be developed.

C. Execution and disbursement schedule

- 5.3 The execution period for this operation will be 12 months and the disbursement period 15 months.

D. Procurement

- 5.4 Procurement for the proposed project will be carried out in accordance with the procedures set forth in document GN-2370-7; Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank of July 2006, and in accordance with the project's procurement plan.

VI. Monitoring and Evaluation

A. Monitoring Arrangements

- 6.1 Main responsibility of monitoring activities under this TC will be of ECC and project team members in coordination with the country office in Guyana.

B. Reports

- 6.2 Mid-term reports for each component will be requested to hired consultant/institution. These reports will include a summary of activities developed to that point in time, budget used, barriers encountered and how these were solved. Additionally, a final report will be also requested upon completion of the agreed activities on each component. This final report will consist of an executive summary and will summarize the objectives and evaluating outcomes and outputs of each component. Specific content for the mid-term and final reports will be specified in the term of reference for each consultancy.

VII. Benefits and beneficiaries of the project

A. Benefits

- 7.1 The main benefit of executing proposed project will be the strengthening of local forest-management knowledge-base in the context of climate change. Guyana's climate change action plan identified forests as one of the main country assets. Studies under this TC will provide complementary information towards the design of specific actions to be developed to preserve the forest while maintaining on-going economic activities. It will also provide the scientific community with bio-physical data that will provide basis to assess impacts of climate change on Iwokrama forest.

B. Beneficiaries

- 7.2 The direct beneficiary of the proposed project will be the Government of Guyana.

C. Risks

- 7.3 There is no significant risk in the delivery of expected components' outputs. The TC will be executed by the Bank minimizing herewith the risk of slowing down the hiring process due to lack of knowledge of Bank's procurement and operational rules. This in turn will contribute to keep control on agreed deliverables submission dates. The specific products' submission dates will be designed based on identified capacity of each hired consultant/institution without moving out the project's execution timeframe of one year.

VIII. Environmental and Social Issues

- 8.1 By its nature, this TC is not anticipated to have negative direct environmental or social impacts and has been classified as a “C” through the Safeguard Classification Tool (2009-03165922-2) and Safeguard Policy Filter Report (2009-03160800-2). In fact, since this TC prepares a project designed to protect globally and locally important tropical forest ecosystems, the analysis and consultation activities financed by the TC will be oriented towards promoting positive environmental and social impacts.