

**PROJECT INFORMATION DOCUMENT (PID)  
APPRAISAL STAGE**

Report No.: PIDA17359

<b>Project Name</b>	Improving Climate Data and Information Management (P129633)
<b>Region</b>	LATIN AMERICA AND CARIBBEAN
<b>Country</b>	Jamaica
<b>Sector(s)</b>	Public administration- Information and communications (100%)
<b>Theme(s)</b>	Climate change (80%), Natural disaster management (15%), Social Protection and Labor Policy & Systems (5%)
<b>Lending Instrument</b>	Investment Project Financing
<b>Project ID</b>	P129633
<b>Borrower(s)</b>	Jamaica
<b>Implementing Agency</b>	Planning Institute of Jamaica (PIOJ)
<b>Environmental Category</b>	B-Partial Assessment
<b>Date PID Prepared/Updated</b>	04-May-2015
<b>Date PID Approved/Disclosed</b>	08-May-2015
<b>Estimated Date of Appraisal Completion</b>	
<b>Estimated Date of First Grant Approval</b>	24-Jul-2015
<b>Appraisal Review Decision (from Decision Note)</b>	<p>(a) The chair authorized the team to appraise the project, subject to addressing recommendations agreed in the meeting.</p> <p>(b) The review discussed the risk rating of the Project and agreed to rate the Project Moderate.</p> <p>(c) Appraisal is scheduled in late April. Negotiations will be planned depending on the progress on the hiring of the PIU staff and the POM. The Board approval is scheduled in the first quarter of FY16.</p> <p>(d) The Decision Review Note has been decided by Sophie Sirtaine.</p>

## I. Project Context

### Country Context

Jamaica is a small Caribbean island country with a population of 2.847 million people (2013) and gross national income per capita of \$6,701 (2012). The country is well endowed with natural resources – marine assets (fish, coral reefs and beaches), fertile soils and high value minerals. The key sources of foreign exchange are tourism (1.5 million tourists each year), remittances, and bauxite mining (the fifth largest exporter of bauxite in the world.) The Millennium Development Goal of universal primary education has been achieved, life expectancy at birth is 73 years and the country is on track for eradicating extreme hunger. Jamaica's ranking on the United Nations'

Human Development Index is 85 out of 187 countries and the value reflects an increase of 19% over the past two decades.

Jamaica's economic performance has been less than expected, despite Jamaica's rich endowment of natural assets, its proximity to US markets and buoyant foreign direct investment (averaging 25% of GDP). During 1973-2007, annual average economic growth was 0.8% while labor productivity declined by 1.5%. It is among the most indebted countries in the world with a public debt-to-GDP ratio at almost 150% in 2013. The sustained, high public debt service obligations and associated large refinancing needs have spiked the country's risk premiums, crowded out and distorted private sector investment, and left the country highly vulnerable to shifts in market sentiment. Consequently, very low growth, high public debt, and serious social challenges remain over the past three decades.

The poorest Jamaican households were disproportionately affected by the economic contraction. Poverty rose sharply to 17.8% (2010) with high increase in rural poverty (from 17% in 2008 to 23.2% in 2010), leaving disparities between rural and urban areas. Households in the lowest two quintiles of the income distribution lost income share. Unemployment rose from 8% in 2006 to 14.3% in 2012, and youth unemployment is about 34% in 2012. Female-headed households, which represent 52% of households in Jamaica, account for 57.6% of the poor. The poverty rate for female-headed households also rose more sharply from 13.3% in 2008 to 19.7% in 2010 .

In May 2013, the Government of Jamaica (GoJ) has put in place a package of strong macro-economic and financial sector regulatory reforms to tighten fiscal policy and achieve increased local tax revenues, with support from an IMF US\$932 million Extended Fund Facility for the period of April 2013 to March 2017. The World Bank (WB) and the Inter-American Development Bank (IDB) each indicated support of US\$510 million to Jamaica for the same period. Together, the three multilateral organizations are supporting a set of ambitious structural reforms designed to stabilize the economy, reduce debt and create the conditions for growth and resilience. The GoJ is also implementing a comprehensive debt management strategy including the take out of high interest Government bonds with lower yielding, longer term debt, aimed at reducing public debt and containing public sector recurrent expenditure.

### **Sectoral and institutional Context**

Natural disasters and vulnerability to climate change have been identified as one of the major challenges to economic growth of Jamaica. The country lies at the edge of the hurricane track and experiences frequent direct impacts and indirect storm damages. Between 2001 and 2012 Jamaica experienced 11 storm events (including 5 major hurricanes) and several flood events. These events combined resulted in loss and damage amounting to approximately US\$1.38 billion . In one case (Hurricane Ivan, 2004) the loss was equivalent to 8.0% of GDP. The damage and losses result in a heavy fiscal burden, increased indebtedness, and redirection of resources from medium-term development plans. Approximately 82% of the population lives in coastal towns and communities located within 5 km of the 1,022 km long coastline. The coastal zone contains an estimated 75% of productive industries and service sectors and is responsible for contributing an estimated 90% to the country's GDP. Settlement patterns and location of major infrastructure along the coast increase vulnerability to natural hazard impacts. Also, inadequately managed urban growth has contributed to unplanned settlements in marginal and environmentally sensitive lands in flood plains and on unstable slopes. Environmental degradation of watersheds and coral reefs has increased the

country's risk to landslides and hurricane events.

Jamaica's vulnerability to global climate change will likely increase in a number of ways. Based on recent projections by the Intergovernmental Panel on Climate Change (2013) regarding climate change, small island countries such as Jamaica will be severely threatened by the direct and indirect impacts of climate change, most of which are projected to accelerate in the coming decades. Jamaica is estimated to have a high economic risk exposure to two or more natural hazards: 96.3% of the national population is exposed to two or more hazards, as is 94.9% of the national territory and 96.3% of the country's GDP (GFDRR 2010). The World Bank's Turn Down the Heat Report No. 3 (2014) identifies that key climate risks in the Caribbean region include higher ENSO and tropical cyclone frequency, precipitation extremes, drought, and heat waves. Data from climate models downscaled for the development of Jamaica's Strategic Program for Climate Resilience (SPCR) as Phase 1 of the Pilot Program for Climate Resilience (PPCR) also indicates that the country likely will experience significant changes in temperature, precipitation and sea-level rise (SLR) by 2050. The models predict that by 2050 increased climate variability likely will result in 20% increase in the frequency of intense rains. Flooding of interior basins is common after intense rainfall due to a distinctive drainage pattern characterized by the mountainous interior surrounded by mostly narrow coastal plains. On the other hand, the country will be drier in the mean (up to 60% by 2080) due to a decrease in rainfall during the traditional wet period (May through November). These will lead to risks of reduced water availability, crop yields, food security, and coastal safety. Furthermore, the country will likely suffer from accelerated coastal erosion in some areas caused by sea level rise; increased flood risk leading to loss of land and disruption to productive sectors and social infrastructure, most importantly health centers and hospitals which directly impacts the population during and after major climate-related events; saline intrusion into coastal water tables; loss of protective coastal systems such as coastal vegetation and coral reefs partly due to higher ocean surface temperatures and acidification; and loss of livelihoods, especially in climate-and weather-sensitive sectors such as tourism, agriculture and fisheries. Slope instability is characteristic of many areas, and intense rainfall combined with deforestation and inappropriate land use practices gives rise to degraded conditions to make landslide vulnerability another feature of Jamaica's hazard profile.

The Poor are particularly vulnerable to climate change impacts due to the heavy reliance on climate sensitive sectors. The majority of the country's poor live in rural areas. A large proportion of the poor lives in upland areas and are engaged in climate-sensitive small-scale agriculture. Among the rural population (47% of total), poverty remains relatively high (23.2% in 2010) and women, who make up 47.8% of the rural poor, provide the bulk of labor in food production activities, are the primary vendors of crops and of fish and are most likely to be directly impacted by food security issues. Moreover, poor areas have lower levels of protective infrastructure, and housing is of low quality and is much less likely to withstand a flood or cyclone. Climate-related disasters and climate change impacts will likely exacerbate existing gender inequalities as poor women are amongst the hardest hit by the effects.

Jamaica's current capacity to develop appropriate climate adaptation measures are critically limited due to inadequate capacity and resources to collect reliable climate data. Jamaica's hydromet system managed principally by the Meteorological Services Division (MSJ) and the Water Resources Authority (WRA) has deteriorated over time as a consequence of inadequate financial resources for either appropriate levels of maintenance or for replacement and expansion of the capital stock of equipment. The original network of 23 climatological stations has dwindled to six

functioning stations. The 20-year old Doppler Weather Radar at Cooper's Hill managed by MSJ is obsolete and subject to periodic malfunctions. Capacity to process hydromet data, develop products, and deliver information and services is not at sufficient level. Upgrading these systems and providing necessary training to these public hydromet data providers will greatly enhance the capacity of the country to predict and prepare for various climate-related and natural hazards. This is paramount for increasing the resilience of Jamaica to climate impacts and ultimately for promoting sustainable economic growth of the country.

The proposed Project would establish the critical foundation for the country's efforts to integrate climate change in decision-making process by improving hydromet data collection and capacity to deliver relevant information services. The proposed Project was developed under Jamaica's Strategic Program for Climate Resilience (SPCR) as the first of its three investment projects. The other two projects are the Institutional Mainstreaming and Sectoral Adaptation project (US\$7.7 in grant and US\$3.6 in loan) and the Climate Change Adaptation and Disaster Risk Reduction Financing project (US\$6.4 in loan). The Jamaica SPCR including the financing to these projects was approved by the Climate Investment Funds (CIF) in October 2011. The methodologies and outcomes obtained under the proposed Project would be shared with and replicated by the Government and other players in the priority sectors identified in the SPCR through these companion projects and other climate and disaster risk management initiatives in Jamaica. (See Annex 2 for more details.)

The health sector is one of the priority sectors identified in the SPCR as vulnerable to climate change. The proposed Project would support the preparation of vulnerability assessments of the selected priority sectors, particularly the health sector by supporting the preparation of a costed resilience strengthening plan for climate-proofing the nation's health facilities and operations. Jamaica's 2.8 million people are served by a health-care system comprising 313 health centers and 23 hospitals. The climate-proofing of the sector is currently marginal, resulting in substantial structural damages and disruption to the business continuity in the event of hurricanes and natural disasters. Furthermore, the country has experienced many outbreaks of vector borne diseases, particularly dengue fever, malaria, and more recently chikungunya which are spread by mosquitoes. The climate is conducive to the development of the larvae which require sufficiently high temperatures and rainfall. Further increases in temperature coupled with unpredictable rainfall patterns are likely to exacerbate these conditions and result in increased incidence of the disease.

## **II. Proposed Development Objectives**

The project development objective is to improve the quality of climate related information for effective planning and action at local and national levels.

## **III. Project Description**

### **Component Name**

Component 1: Upgrading Hydro-Meteorological Data Collection, Processing and Forecasting Systems

### **Comments (optional)**

This component will support investments for upgrading and providing critically needed new equipment, systems, and operator training for data collection, and processing for improved hydro-meteorological and agro-meteorological forecasts in order to ultimately enhance the availability and

reliability of data for climate change scenario modelling, risk analysis and warning systems, and knowledge sharing.

**Component Name**

Component 2 : Climate Resilient Planning and Hydro-meteorological Information Services

**Comments (optional)**

This component will provide technical assistance support to promote Jamaica's readiness for climate events.

**Component Name**

Component 3 : Climate Change Education, Awareness and Behavior Change

**Comments (optional)**

This component will provide technical assistance support to (a) carrying out the climate change information, education and communication (IECC) initiative, and (b) implementing targeted attitude and behavior change campaigns to address climate change adaptation needs and influence behavioral change of targeted groups.

**Component Name**

Component 4 : Project Management, Monitoring and Evaluation

**Comments (optional)**

This component will provide support to carrying out the Project, including overall technical management, financial management, procurement, compliance with environmental and social safeguards, monitoring and evaluation of data collection, supervision of works through the provision of consulting services and Operating Costs.

#### IV. Financing (in USD Million)

Total Project Cost:	7.48	Total Bank Financing:	0.00
Financing Gap:	0.00		
<b>For Loans/Credits/Others</b>			<b>Amount</b>
Borrower			0.68
Strategic Climate Fund Grant			6.80
Total			7.48

#### V. Implementation

The Planning Institute of Jamaica (PIOJ), a statutory body within the Ministry of Finance and Planning, is the executing agency for the proposed Project as well as other projects to be implemented under the PPCR. PIOJ plays a number of critical roles including sustainable development planning, implementation of Jamaica's Development Plan, Vision 2030, and is the national Focal Point for the PPCR and for the implementation of the investment projects developed under the SPCR (PPCR Phase 2). As the executing agency, PIOJ will establish a central executing and fiduciary services unit (PPCR-PIU) to be responsible for coordinating all activities of the Project and providing fiduciary support to the implementing agencies.

The Government has established an umbrella PPCR Steering Committee (PPCR-SC) to serve as the main body responsible for providing advice and oversight to the implementation of PPCR and associated projects. Under the proposed Project, the PPCR-SC would serve as the Project steering committee to be responsible for ensuring that the Project is effectively and expeditiously implemented in keeping its development objectives, results framework and budget and for

addressing any inter-agency and strategic level issues and risks that may adversely affect the implementation of the Project. The PPCR-SC is chaired by the PPCR Focal Point—currently the Deputy Director General, Sustainable Development and Social Planning of PIOJ. Members of the PPCR-SC are drawn from a cross-section of stakeholders with technical interest in and knowledge of natural hazards, risk and climate change issues, including relevant Government Ministries, Departments and Agencies, private sector bodies, academia, and civil society. International development partners are offered observer status on the Committee.

Direct responsibility for and technical oversight of the various components of the Project will be assumed by the respective implementing agencies, namely MSJ, WRA, CCD and NSDMD under the MWELCC, RADA under the MOAF, the Office of Disaster Preparedness and Emergency Management (ODPEM) under the Ministry of Local Government and Community Development (MLGCD), and the Ministry of Health (MOH). Each implementing agency will nominate the Project Focal Point to coordinate and oversee day-to-day Project activities.

## VI. Safeguard Policies (including public consultation)

<b>Safeguard Policies Triggered by the Project</b>	<b>Yes</b>	<b>No</b>
Environmental Assessment OP/BP 4.01	<b>x</b>	
Natural Habitats OP/BP 4.04		<b>x</b>
Forests OP/BP 4.36		<b>x</b>
Pest Management OP 4.09		<b>x</b>
Physical Cultural Resources OP/BP 4.11		<b>x</b>
Indigenous Peoples OP/BP 4.10		<b>x</b>
Involuntary Resettlement OP/BP 4.12		<b>x</b>
Safety of Dams OP/BP 4.37		<b>x</b>
Projects on International Waterways OP/BP 7.50		<b>x</b>
Projects in Disputed Areas OP/BP 7.60		<b>x</b>

**Comments (optional)**

## VII. Contact point

### **World Bank**

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### **Borrower/Client/Recipient**

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