PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE

Report No.: PIDA21144

Project Name	HT Strengthening Hydro-Met Services (P148259)
Region	LATIN AMERICA AND CARIBBEAN
Country	Haiti
Sector(s)	Flood protection (60%), Irrigation and drainage (40%)
Theme(s)	Natural disaster management (60%), Other rural development (20%), Urban planning and housing policy (20%)
Lending Instrument	Investment Project Financing
Project ID	P148259
Borrower(s)	Republic of Haiti
Implementing Agency	Ministry of Agriculture, Natural Resources and Rural Development (MARNDR)
Environmental Category	B-Partial Assessment
Date PID Prepared/Updated	10-Apr-2015
Date PID Approved/Disclosed	13-Apr-2015
Estimated Date of Appraisal Completion	24-Mar-2015
Estimated Date of First Grant Approval	28-May-2015
Appraisal Review Decision (from Decision Note)	The main decisions were: (a) The chair authorized the team to appraise. (b) A draft Operations Manual will be ready by negotiations.

I. Project Context

Country Context

Haiti is the third largest Caribbean nation, with an estimated population of 10.4 million. The country's comparative advantages include access to major markets, abundant human capital (35 percent of the population is under 15) and a dynamic diaspora. Agriculture, light manufacturing, tourism and potential mineral resources represent opportunities for the country's economic development. Five years after the devastating earthquake that hit the country in January 2010, the overall economy has been improving, driven by reconstruction and services. GDP growth was 2.9 percent in Fiscal Year (FY) 12, 4.2 percent in FY 13, and 2.7% in Haiti during FY 14. Meanwhile, the fiscal deficit is estimated to have only slightly narrowed from 7.1% of GDP in FY2013 to 6.4% of GDP in FY2014. The decline in aid and in international oil prices (which affect the availability of Petro Caribe resources for public investment) is reducing the country's fiscal space, putting pressure on Government deposits. Although extreme poverty declined from 31% to 24% between 2000 and 2012, driven by rising non-agricultural labor income and external financial flows (e.g. remittances and international aid), poverty remains very high at 60%. Recent data shows that almost

6.3 million Haitians are unable to meet their basic needs and 2.5 million unable to cover food needs. One million Haitians live slightly above the poverty level and could fall back into poverty due to an external shock, including climatic shocks. Evidence shows that climatic shocks are the most frequent shocks affecting communities in Haiti.

Haiti's economic recovery and growth potential will not be sustained without improving the country's resilience to natural hazards. A World Bank global study ranked Haiti fifth in exposure to risk of two or more hazards, with over 93 percent of its territory and 96 percent of its population at risk of two or more hazards and 56 percent of its GDP linked to an area exposed to risk stemming from two or more hazards. Haiti is located in a seismically active zone being intersected by several major tectonic faults and is exposed to weather and climate hazards, especially cyclones (wind damage, flooding, land/mudslides and coastal surges) and droughts. The presence of mountain ranges behind the coastline favors flooding due to rapid runoff during heavy rainfall and impacting the urban areas located on the coast. High population density (up to 40,000 per km2 in Port-au-Prince), combined with the large number of informal settlements and weak infrastructure, renders Haiti's population particularly vulnerable.

Understanding hydro-meteorological and climate risks is imperative to assess social and economic impacts and to develop adequate policy responses to support Haiti's sustained development. Over the past decade, hydro-meteorological hazards alone killed more than 6,600 people and affected 1.3 million others. In addition to claiming human lives, hydro-meteorological hazards take a heavy toll on all sectors of the Haitian economy. Largely rain-fed, Haiti's agriculture sector is the main livelihood in rural areas and vulnerable to hydro-meteorological and climate hazards, which poses a threat to Haiti's ability to meet its food security targets. Possible manifestations of climate change (variations in rain patterns, intensification of cyclones, reduction in rainfall, longer periods of drought, and the salinization of coastal plains) may reduce agricultural productivity and, in conjunction with the volatility of global food prices, pose a significant threat to Haiti's foods security. Lack of historical datasets for floods, landslides and wind makes it hard to run probabilistic risk models and inform planning of new infrastructure, including hydro-electric plants and other renewable forms of energy production.

An effective capacity to monitor hydro-meteorological and climate parameters and estimate the potential impact of events is critical for increasing Haiti's resilience, enhancing its productivity and benefiting society at large. For instance, systematic meteorological and hydrological data collection is needed to establish early warning systems for tropical cyclones, wind storms, floods, drought and other hazards, hence preventing losses of human lives, and delivering reliable information to farmers. Globally, recorded economic losses linked to extreme hydro-meteorological events have increased nearly 50 times over the past five decades, while the global loss of life has decreased significantly, by a factor of about 10. This can mainly be attributed to advancements in monitoring and forecasting, early warning and emergency preparedness and response planning at the national and local levels. In addition, comprehensive historical hydro-met datasets are indispensable to improve the resolution of climate models and better understand climate change impacts.

Sectoral and institutional Context

Haiti's hydro-meteorological services are dispersed across several institutions in charge of collecting, storing, processing, and disseminating data. The National Center for Meteorology (CNM) and the National Service for Water Resources (SNRE), both under the Ministry of

Agriculture, Natural Resources, and Rural Development (MARNDR), have a primary role in providing hydro-meteorological and climate services. However they both lack a dedicated budget, adequate human resources, and operational procedures to fulfil their mandate. CNM de facto relies on the National Civil Aviation Agency (OFNAC), which provides them with office space and personnel. Forecasting is largely supported by Météo France due to CNM's insufficient operational capacity and it is not verified due to a lack of observation data and inadequate human resources (only two trained forecasters). SNRE, which until 2001 also integrated CNM (in addition to the agro-meteorological and climate service; groundwater and surface water services) has seen its human and financial resources gradually reduced and has mostly relied on international assistance.

In 2006 a ministerial decree transferred the responsibility for hydro-meteorological services to the Ministry of Environment (MDE), introducing further complexity in the institutional framework. In principle, within MDE, the National Observatory on Environment and Vulnerability (ONEV) would have the mandate for managing all environmental information, while the Water Resource Directorate (DRE) would be responsible for monitoring watersheds and water resources (including groundwater). In practice, both departments lack an operational budget to fulfil their mission and depend almost exclusively on project resources. As a result, the respective responsibilities of these agencies tend to vary according to available resources, and are not based upon sound operational procedures.

Finally, the National Center for Geographical and Spatial Information (CNIGS), whose mission is managing and disseminating geospatial information, plays a role in hydro-met data collection. A semi-autonomous entity attached to the Ministry of Planning and External Cooperation (MPCE), CNIGS is considered as a reliable and effective technical partner in data management by many national and international agencies. Although not formally mandated to collect hydro-met data, today CNIGS manages 24 automatic meteorological stations provided by a European Union (EU)-financed project.

In a context of institutional fragmentation and lack of sustainable financing, projects supported by international donors have contributed to the creation of parallel and uncoordinated systems for hydro-met data acquisition, validation, storage and analysis. The lack of clear roles and responsibilities and the absence of a coordination structure has led some government agencies (e.g. the National Coordination for Food Security, CNSA) and several NGOs with recurrent needs for hydro-met data to develop their own data collection and management system. This has resulted into a constellation of stations of different types managed by several public and private entities, installed on a project basis and not connected to a national network. Aside from donor financing, maintenance of hydro-met stations (particularly automatic ones) as well as data collection and transmission are not sustained and have been discontinued also due to other challenges such as the lack of access to remote areas, vandalism, and weather damage. Data currently collected by existing stations is not being stored in a central database and is therefore not being used, with the exception of sporadic donor-funded initiatives. Historical data from stations is scattered and in many cases recorded on paper hence not appropriately accessible, nor scientifically validated, and vulnerable to rats, mice or time. Finally, there is a shortage of middle managers and experts with specialized training on hydro-meteorology, climatology and related disciplines, as well as of a specific policy and operational framework for climate resilience.

In order to overcome these challenges, there is a urgent need for re-organizing the hydromet services with a view to increasing their sustainability. The first steps for the reorganization have

been taken under the umbrella of the Haiti SPCR, with support from the Inter-Ministerial Committee for Territorial Planning (CIAT), focal point within the GoH. In November 2013, the Minister of Agriculture appointed an inter-ministerial "Ad-hoc Commission" tasked with putting forward options for an institutional reform of Haiti's hydro-meteorological services. This was part of a broader institutional reform process of the MARNDR. Throughout 2014, national technical-level consultations pointed to a general consensus on the need for a new institutional framework for the hydromet services with the following key priorities: (i) rationalizing and streamlining the national data collection and management system; (ii) establishing a mechanism to bring together data producers and main end-users (aviation, civil protection, water utility, etc.) and provide feedback and increase the socio-economic value of data; (iii) working towards a sustainable financing model based on a cost-recovery principle.

II. Proposed Development Objectives

The Project Development Objective (PDO) is to strengthen the Republic of Haiti's institutional capacity to provide hydro-meteorological and climate information services customized to the needs of the civil protection and agriculture sectors, which contributes to increasing disaster and climate resilience.

The PDO will be achieved through: (i) integrating existing hydro-met data collecting networks into a national data platform and strengthening capacity for data archiving, validation, and analysis; and (ii) identifying weather, water, and climate services' requirements for select end users (including agriculture and civil protection).

III. Project Description

Component Name

Institutional strengthening of hydro-meteorological services and development of data management tools

Comments (optional)

This component will aim to integrate the existing hydromet data collection networks into one national platform based on an open data approach and accessible across end users in the GoH and beyond. TA will be provided to the GoH to move from the current structure of six hydro-meteorological networks managed by different government entities to a structure with one national data platform and a shared standard operating procedure for operating and maintaining all hydro-meteorological data collection devices. The component will: support a country-wide, geo-referenced baseline assessment of stations; define requirements for an optimal national network; repair and replace, where needed, existing data-collecting stations; establish a data platform that gather data from all existing stations.

Component Name

Identification of weather, water and climate services' requirements for select end users and development of information services to support decision making

Comments (optional)

The focus of this component will be the definition of hydro-met information requirements for end-users. In line with recommendations from the Global Framework for Climate Services, this is expected to be a long-term process, with a continuous user feedback mechanism, including in the aftermath of major events. End-users targeted by the project include: civil protection (e.g. parametric thresholds for select high-risk zones, in order to enable use of the hydro- meteorological data platform as a decision support mechanism for the activation of warnings by the Civil Protection

Directorate (DPC) and agriculture (e.g. leveraging the new data platform to improve existing information services for farmers and national food security agency).

Component Name

Support to project implementation, monitoring and evaluation, and PPCR knowledge management

Comments (optional)

Component 3 will support implementation capacity to the MARNDR to comply with Bank fiduciary procedures, safeguards, monitoring and evaluation and ensure effective and timely implementation of project activities. It will also contribute to monitoring and reporting progress on the project-level results of the SPCR (in coordination with CIAT). Special attention will be paid to distilling learning and knowledge from the project and disseminating them across the PPCR national and regional partners.

IV. Financing *(in USD Million)*

Total Project Cost:	5.00	Total Bank Financing:	0.00
Financing Gap:	0.00		

For Loans/Credits/Others	**Amount**
Borrower	0.00
Strategic Climate Fund Grant	5.00
Total	5.00

V. Implementation

The project will be implemented by MARNDR, who will have responsibility for reporting fiduciary and overall project progress to the Ministry of Finance and the World Bank. MARNDR services for meteorology and hydrology, currently split between CNM and SNRE respectively, will be the main technical counterparts of the project. A project coordinator hired through the project will be responsible of the successful implementation of all the project activities. The project coordinator will report to the Director General (DG) of the MARNDR. Should CNM and SNRE be merged into the new hydro-meteorological Unit during the project timeframe, the project coordinator will be reporting to its director. The project will rely on the fiduciary and M&E services of the MARNDR and will strengthen their capacities as needed. This is in line with the Bank and main development partners' strategy to use and strengthen MARNDR institutional capacity, increase ownership and move away from a ring-fenced project-based approach.

CIAT remains the PPCR focal point for Haiti, with the responsibility of ensuring coordination among the agencies executing the different investment projects and reporting on behalf of the GoH to the Climate Investment Funds (CIFs). As described in the SPCR, CIAT will facilitate the coordination among different state and non-state institutions involved in this project, as well as the policy dialogue needed to integrated climate resilience in the GoH's plans and investments.

MARNDR would continue to provide strategic oversight to the sector and ensure inter-ministerial coordination through a multi-stakeholder Steering Committee (Director level), which would meet twice a year and would include the following government institutions: MARNDR, MDE, CIAT, CNSA, CNIGS, OFNAC, DPC, SEMANAH.

VI. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	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

Comments (optional)

VII. Contact point

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