

PILOT PROGRAM FOR CLIMATE RESILIENCE

Summary - Project/Program Approval Request

1. Country/Region:	Republic of Yemen	2. CIF Project ID#:	XPCRRY054A
3. Project/Program Title:	<i>Climate Information System and PPCR Program Coordination</i>		
4. Type of PPCR Investment	<i>Public</i>		
5. Funding Request (in USDmillion total) for Project/Program::	<i>Grant: USD19 million</i>	<i>Loan:</i>	
6. Approved Preparation Grant	<i>Amount (USD): N/A</i>	<i>Date: N/A</i>	
7. Implementing MDB:	<i>World Bank</i>		
8. Other MDB Involvement	<i>MDB: N/A</i>	<i>Type of Involvement: N/A</i>	
9. National/[Regional] Project Focal Point:	<i>Mr. Khaled Al-Shaibani, Chairman, and Anwar Noman, Environment Protection Authority (EPA)</i>		
10. National/[Regional] Executing Agency¹ for project/program:	<i>Environment Protection Authority (EPA)</i>		
11. MDB PPCR Focal Point and Project/Program Task Team Leader (TTL):	<i>Headquarters-PPCR Focal Point: Kanta Kumari Rigaud kkumari@worldbank.org</i>	<i>TTL: Lia Sieghart lsieghart@worldbank.org</i>	

12. Project/Program Description:

The project aims to increase climate resilience – better managing water resources, increasing agricultural productivity and reducing the risk of climate-sensitive diseases – by improving the monitoring and assessment of climate variability and change and providing targeted and reliable information for decision making. The project will have social and economic benefits by managing risk in weather-related disasters that disproportionately affect the poor and vulnerable populations through improving forecasting, early warning systems and the observed climatology of Yemen. This would be achieved by building up a National Framework for Climate Services as proposed by and supporting the provision of data and information to the Global Framework for Climate Services (GFCS), through: upgrading the existing meteorological and hydrological observing networks, improving the timeliness and accuracy of weather and flood forecasts and warnings, and delivering better weather, climate and water services. Activities funded through the project would help improve climate-sensitive decision-making and planning in key vulnerable and water resources dependent sectors, particularly agriculture, and contribute to building resilience for communities and sectors at risk. Better uptake and use of weather, climate and water information would be achieved by strengthening partnerships between the providers and users of weather, climate and water information through dedicated climate working groups and existing community organizations. The project would also improve coordination and information sharing between all of agencies responsible for the collection of climate data, analysis and decision-support as well as

¹ Can be Government agency or private sector firm

maintain the oversight of the overall PPCR program, particularly in regards to knowledge management, awareness rising and information sharing with stakeholders of information developed throughout the program.

The project consists of the following four components:

Component A. Institutional Strengthening and Capacity Building (PPCR Financing US\$3.40 million including contingencies): This component aims to improve climate resilience in Yemen through provision of weather, climate and water services that meet stakeholders' needs by creating the conditions that ensure institutional, staffing and financial sustainability of the key providers (Civil Aviation and Meteorological Authority (CAMA)/Yemen Meteorological Service (YMS), Ministry of Agriculture and Irrigation (MAI) and National Water Resources Authority (NWRA)). This includes revising and updating institutional strategies taking into account new requirements for climate services. It will support revision and adoption of legal frameworks and standard operating procedures, in line with international common practice to share data and information to improve intra-government cooperation to cope with weather, climate and water related hazards. It will build capacity through training providing access to new skills and opportunities within each of the participating organizations. The component will also support the technical design and implementation of the overall modernization program to ensure that the new components can be integrated into the current operational systems.

Component B. Modernization and Expansion of the National Hydrometeorological and Monitoring Networks (PPCR Financing US\$7.55 million including contingencies): This component aims to upgrade and expand the observations networks for meteorology, agrometeorology and hydro-meteorology, ensuring that these networks are interoperable between CAMA/YMS, MAI, NWRA and the development authorities to enable the efficient and timely transmission of information that is essential for management of disaster risks, agriculture and water resources. Collection and timely communication of high-quality data is the foundation of producing reliable weather forecasts and warnings as well as monthly and longer term climate outlooks based on a national climatology. The modernization of the observing networks includes rehabilitating and extending the MAI and NWRA agrometeorological and hydrometeorological networks; extending the CAMA/YMS weather and climate surface and upper air network, and installing Doppler radar for enhanced precipitation measurement, severe weather and flood forecasting. It requires modernizing the communication and ICT system to transmit data efficiently. The component also includes the design and pilot operation of an environmental monitoring system.

Component C. Enhancement of Service Delivery System (PPCR Financing US\$4.35 million including contingencies): This component aims to enhance the delivery of weather and climate services to end-users. It provides for the implementation of a systematic upgrade of the weather, climate and water-related end-to-end services provided to all agencies, communities and individuals. In particular, it will extend the forecasting, analysis and service delivery capabilities of CAMA/YMS to provide guidance to agriculture, water resources and irrigation, DRM, media, civil aviation, health and renewable energy. It will also provide demographic-specific services where differentiated information targeted to specific vulnerable groups and individuals. Information specific to rural women will be developed and highlighted because of their vulnerability in livelihood development. Given the importance of warning systems for flash

floods – two pilots will focus on implementing end-to-end early warning systems developed together by CAMA/YMS, MAI, NWRA and Civil Defense Authority (CDA), on behalf of the wider disaster risk management community, and in consultation with other disaster risk management (DRM) efforts. This component will also help CAMA/YMS, MAI and NWRA improve the quality of their services to their various stakeholders. It provides the foundation for a National Framework for Climate Services, which would increase access to high quality climate information, facilitate sharing of knowledge and know-how, and strengthen or establish community-level partnerships between the users and providers to understand and use weather, climate and water information more effectively and ultimately reduce vulnerability to climate change. Information will be delivered in a variety of ways depending on the specific local circumstances ranging from radio and mobile telephone messages that inform users directly to bulletins delivered through community based organizations. All of which are standard procedures for existing weather and climate information.

Component D: PPCR Program Management and Knowledge Sharing (PPCR Financing US\$3.70 million including contingencies): This component will carry out the oversight of the PPCR implementation, including synthesizing the main results achieved by the investments under the SPCR to inform relevant decision-making. It will include monitoring and evaluation of gender sensitive approaches to project implementation. Knowledge sharing will be carried out across all of the Yemen PPCR investments to increase public awareness of climate variability and change and its impact on day-to-day activities in Yemen. It would guide the initial development of the climate database management system by establishing procedures to ensure open access to climate information by all users. Public education and outreach activities will be geared towards improving information access and awareness raising of the challenges caused by climate change. Particular attention would be given to communities which need to take preparatory action to mitigate adverse consequences of the climate and hydrometeorological hazards – improving community response to flood warnings, improving management of surface water resources, improving food security, improving health outcomes, improving climate-resilient coastal zone management, and improving rural livelihoods. This component also supports and strengthens the PPCR-PCU to carry out the fiduciary responsibilities and reporting in a timely and effective fashion as required by the legal and binding agreement entered into between the Bank and the Government of Yemen.

Sectors and Themes:

Sectors - General information and communications sector (50%), Public administration-Water, sanitation and flood protection (50%)

Themes - Climate change (100%)

13. Objective

The project development objective is to improve the quality of hydro-meteorological and climate services provided to end-users². This objective would be achieved through improved forecasts resulting from improved observing networks, the introduction of new technologies, and access to higher resolution global weather and climate products. Service improvements will also depend on training both the providers and users of services to be able to tailor information more effectively to users' needs. The geographical focus will be country-wide.

14. Expected Outcomes:

² See para 17(b) in the PAD for detailed definition of the end-users

Improved forecasts resulting from improved observing networks, the introduction of new technologies, and access to higher resolution global weather and climate products	
Service improvements through training both the providers and users of services to be able to tailor information more effectively to users' needs	
The entire population will benefit from better warnings of hydrometeorological hazards and more accessible, equitable and quality-assured climate information and services.	
15. Key Results and Indicators for Success (consistent with PPCR Core indicators):	
Result	Indicator
(a) Improved quality of weather information through increased accuracy, timeliness and coverage of weather forecasts for Yemen	Skill (0-1) ³ of weather forecasts of 24 hours lead time for main administrative centers
(b) Improved quality of services and data access ⁴ through the development and reliable operation of an authoritative public weather service providing meteorological and hydrological warnings for extreme and high impact events	Data collected at observation stations reaching data centers in line with Standard Operating Procedure (SOPs)
(c) End-users using improved tools, information and instruments to cope with the effects of climate change	Direct project beneficiaries (number) of which female (percent) <i>(Relates to PPCR Core indicator A.1.3: Number of people supported by the PPCR to cope with the effects of climate change)</i>
(d) Increased financial sustainability of operations related to collection of weather, climate and hydrological data and mainstreaming climate resilience at the national level	Percentage of operation and maintenance funds for essential operational needs covered by CAMA/YMS, MAI, NWRA budget allocations <i>(Relates to PPCR Core Indicator B2: Evidence of strengthened government capacity and coordination mechanism to mainstream climate resilience)</i>
(e) Climate-vulnerable communities in two pilot regions satisfied with and benefit from better warnings of hydrometeorological hazards and more accessible, equitable and quality-assured climate information and services.	Population surveyed in pilot regions satisfied with public weather service <i>(Relates to PPCR Core indicator B5: extent to which climate responsive instruments/investment models are developed and tested and B1: extent to which vulnerable households, communities businesses and public sector services use improved PPCR supported tools, instruments, strategies, activities to respond to CV&CC)</i>

³ 1 is perfect score, verified using standard methods for forecast verification - World Meteorological Organization World Weather Research Program/World Climate Research Program (WMO WWRP/WCRP)

⁴ A survey instrument will be developed, commonly referred to as a Composite Satisfaction Index (see IRI.C3 in Annex 1 of PAD), which NMSs use to measure the impact of their services on users. Each SI is tailored to measure the impact of the specific services provided by an NMS (see IRI.C1). This would be developed during the first phase of implementation following the definition of user requirements and in consultation with users

(f) Greater integration of learning and knowledge into climate-resilient development	National Climate Service Framework Program implemented <i>(Relates to PPCR Core indicator A.2.1: degree of integration of CC in national, including sector planning and B2: Evidence of strengthened government capacity and coordination mechanism to mainstream climate resilience)</i>
(g) IMCCC is regularly updated on SPCR implementation and relevant information concerning PPCR activities is shared at national and international levels. Increased knowledge & awareness of the effects of climate change and variability among government, private sector and civil society.	Information sharing materials on program initiatives made public <i>(Relates to PPCR Core indicator B2: Evidence of strengthened government capacity and coordination mechanism to mainstream climate resilience)</i>
(h) Information and data are used for planning and implementation of future programs and projects. Increased capacity of practitioners to data leading to informed decision making	CAMA/YMA puts the climate and weather data on the website <i>(Relates to PPCR Core indicator A.2.1: degree of integration of CC in national, including sector planning)</i>
(i) Effective management and coordination of overall PPCR activities that leads to incorporating climate resilience into development programs and investment plans.	Number of consultations and workshops at program level with decision makers and donors <i>(Relates to PPCR Core indicator A.2.1: degree of integration of CC in national, including sector planning and B2: Evidence of strengthened government capacity and coordination mechanism to mainstream climate resilience)</i>

16. Budget:		
Expenditures⁵	Amount (USD) - estimates	
Consulting services and training	7,535,000	
Goods and Works	9,465,000	
Operating Cost	900,000	
Contingencies (max. 10%)	1,100,000	
Total Cost	19,000,000	
Co-Financing ⁶ :	<i>Amount (USD million):</i>	<i>Type of contribution:</i>
• Government		
• MDB		
• Private Sector		
• Others (please specify)		
Co-Financing Total		

⁵ Expenditure categories should be provided by the MDBs based on own procedures.

⁶ This includes: in-kind contributions (monetary value), MDB loan or grant, parallel financing, etc.

17. **Project/Program Timeframe**

Expected Board/MDB Management⁷ approval date: September 27, 2013

Expected Mid-Term review date: June 1, 2016

Expected Project/Program closure⁸ date: December 31, 2018

18. **Role of other Partners involved in project/program⁹:**

Oversight of the project would be entrusted to the Inter-Ministerial Committee for Climate Change (IMCCC), which is chaired by the Minister of Planning and International Cooperation, and comprised of Ministers of all line-Ministries. The IMCCC is assisted by a Technical Secretariat, the EPA, and by a Technical Committee (TC) comprised of the Project Partners – CAMA/YMS, MAI, and NWRA.

The project would also improve coordination and information sharing between all of agencies responsible for the collection of climate data, analysis and decision-support as well as maintain the oversight of the overall PPCR program, particularly in regards to knowledge management, awareness rising and information sharing with stakeholders of information developed throughout the program. There will be a close interaction with the primary end-users of meteorological and hydrological services such as the DRMU in Civil Defense Authority (CDA) and other disaster management entities at the national and local level, the general public, farmers, health and energy sectors, water basin committees and water user associations, and community based organizations with specific responsibilities for social and economic development and disaster reduction.

Consultation with the donor community, such as Germany, the Netherlands, the UK, Japan, UNDP, USAID, IFAD, FAO, WHO, France, the Arab Fund for Economic and Social Development, and the Islamic Development Bank guided project preparation as well as allowed to establish good synergies and coordination with relevant donor projects and programs. Some examples are the Fisheries Resource Management and Conservation Project, the Water Sector Support Project (WSSP), the Agro-biodiversity and Climate Adaptation Project, the Labor Intensive Program, etc. There are also a range of activities supported by international and bilateral donors, such as the German Development Cooperation, namely the Integrated Water Resource Management Program funded by KfW and the GIZ (including CIM/DED) and the National Water Resources Information System (NWRIS) Project supported by the Federal Institute for Geosciences and Natural Resources (BGR). UN International Fund for Agricultural Development (IFAD) finances ‘Mapping climate change impacts on smallholder agriculture in Yemen using GIS modeling approaches’. The project will continue the close dialogue and consultation with the donors and build strong operational links where possible to plan joint field activities with relevant ongoing projects.

⁷ In some cases activities will not require MDB Board approval

⁸ Financial closure date

⁹ Other local, national and international partners to be involved in implementation of the project/program.

19. **Implementation Arrangements** (incl. procurement of goods and services):

Project Management. The PPCR-PCU already established in the EPA would be responsible for overall project management. In line with the assessment carried out and the needs for this project, it would be significantly strengthened by recruiting a PCU Director, a Procurement Manager, an M&E Specialist, a Procurement Assistant, an Accountant, an IT Specialist, a part-time Environmental Advisor, a part-time Social Advisor and a part-time Gender Specialist. The PCU Director would be recruited to manage this project while also overseeing Phase I. The Director would report to the EPA Chairman as the Head of the Technical Secretariat to the IMCCC and as PPCR National Focal Point. To support the Government's efforts to increase female participation in the specialist workforce, the aim would be to recruit women for a minimum of 30% of the above positions. In addition the PPCR-PCU will be supported by a minimum of 2 female specialists seconded by the participating organizations in support of a "Gender Smart Management Framework" outlined below.

Fiduciary Responsibility of the PPCR-PCU. The PPCR-PCU will facilitate the implementation of project activities through financial management (FM), procurement of goods and services with the technical assistance of the General Consultant/Integrator and in accordance with IDA regulations and procedures elaborated in the Project Operating Manual (POM). The PCU has acquired some experience in the implementation of Phase I project, and the current staffing will be augmented as described above. The PPCR-PCU will: (i) monitor outcome and output indicators; (ii) support CAMA/YMS, MAI and NWRA in executing the Implementation Plan; (iii) ensure compliance with the signed MOU; (iv) resolve implementation issues; (v) prepare and submit progress reports to the IMCCC and the Bank, including the baseline and values of specific implementation indicators by component; and (vi) submit the quarterly Interim Financial Reports and the annual Audit Reports to the Bank in a timely manner.

Technical Implementation. CAMA/YMS will be responsible for the technical implementation of Components A, B, and C, in close coordination with MAI and NWRA and with the assistance of the General Consultant/Integrator. More specifically, CAMA/YMS will be in charge of: (i) preparing the main tasks/TORs for and controlling performance of the General Consultant/Integrator; (ii) preparing, with support of the General Consultant/Integrator and in consultation with MAI and NWRA, detailed technical specifications and bidding documents for equipment procured under components A, B and C of the Project; (iii) jointly with General Consultant/Integrator, providing guidance on installation, operation and maintenance of the equipment; (iv) developing new information formats and products for analyzing weather and climate information; (v) maintaining a publically accessible climate database; and (v) strengthening partnerships with end-users to ensure the uptake of new weather, climate and water services.

20. **Other Information:**