



CLIMATE
INVESTMENT
FUNDS



GFDRR
Global Facility for Disaster Reduction and Recovery

AEMet AFRIMET-V



World Bank Support for Strengthening NMHSs

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The challenge

- NMHSs' capacity in many regions is not adequate.
- NMHSs need significant investment in over 100 countries, most of them in Africa (>50).
- Conservative estimate of high priority investment needs = over USD 1.5-2 billion.
- Minimum USD 300-500 million per year is necessary to support operations of modernized systems.
- International support is significantly below these needs.
- International support so far mostly unsuccessful because:
 - Lack of government understanding of NMHS's value
 - Poor project design (reliance on unsustainable high tech solutions, inadequate capacity building, limited scope of investment, etc.)
 - Technical complexity
 - Lack of coordination between donors



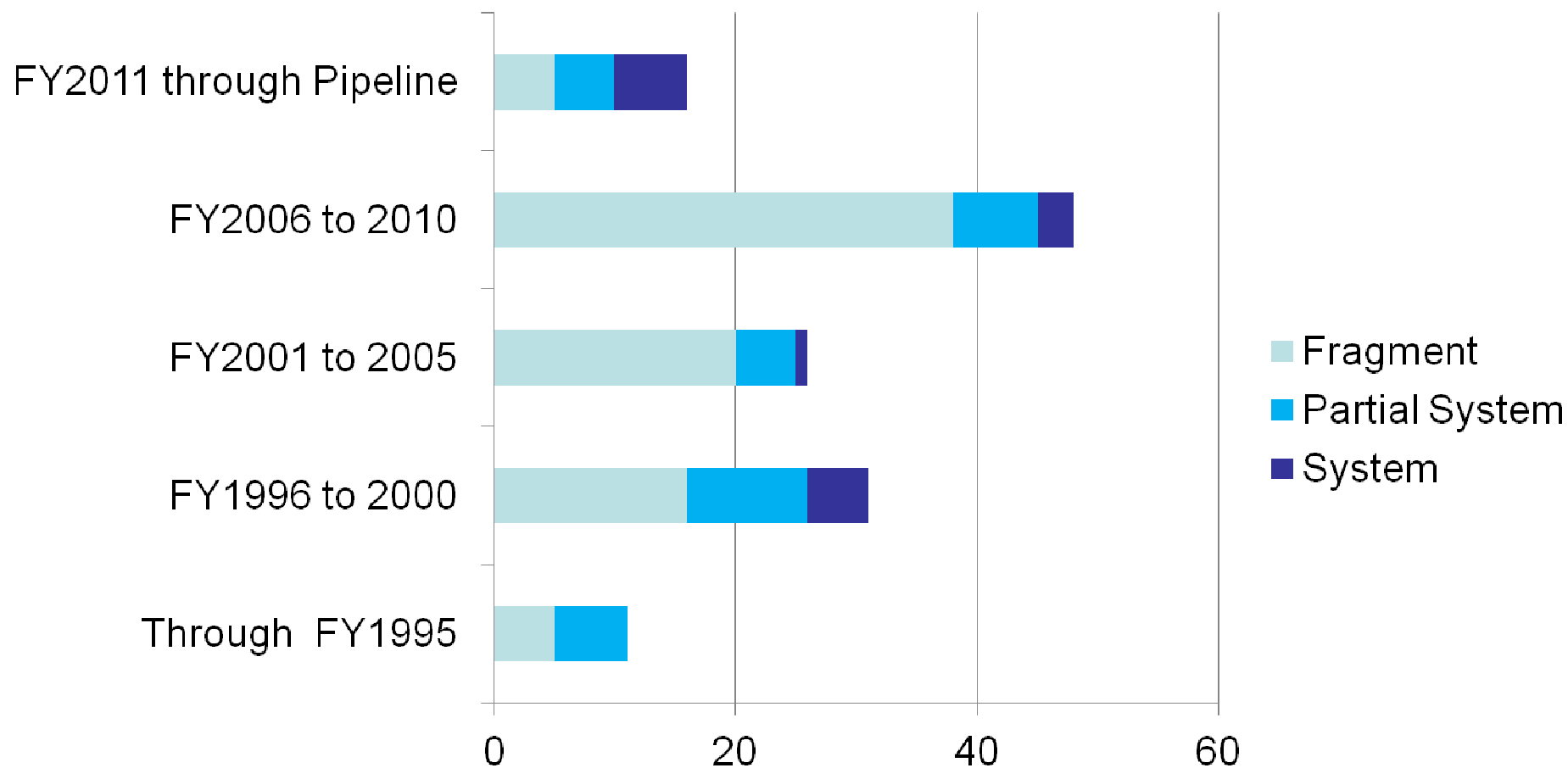
World Bank support to NMHSs

- Since mid-1980s World Bank has implemented over 150 operations with some elements supporting NMHSs.
- Previously however relatively few operations were aimed to modernize the whole NMHS systems.
- The number of operations and their scope considerably increased since mid-1990s.
- Current total cost of investments exceeds USD 400 million but most investments are in middle-income countries (Russia, Mexico).
- New set of projects is under development and these are taking into account lessons learned.



Types of Bank operations

World Bank Hydromet Investment Trends





Pilot Program for Climate Resilience

- ❑ **Goal**
 - Mainstream climate resilience into development for transformational change
- ❑ **Pledged Resources**
 - Pledges to date: \$992 M
- ❑ **Available to PPCR pilots**
 - Country pilots: up to US\$ 50 million in grant resources and up to US\$ 36 million in concessional loans
 - Regional pilot programs: up to US\$ 75 million in grants and up to US\$ 36 million in loans depending on resource availability.
- ❑ **2 stage process**
 - **Phase 1:** Preparation of Investment Plan (SPCR) – up to \$ 1.5 M
 - **Phase 2:** Implementation and Management of the Investments from SPCR
- ❑ **Learning & Exchange Fora**
 - Pilot Countries Meeting
 - Partnership Forum
- ❑ **World Bank management of program**
 - Lead: Environment Department
 - PPCR Task Leaders in the Regions

Measuring Success

- Increased capacity to integrate climate resilience into development
- Increased awareness of vulnerabilities and potential impacts
- Scaled-up investments for broader interventions and programming
- Improved coordination among stakeholders
- Capture & transfer of lessons learned

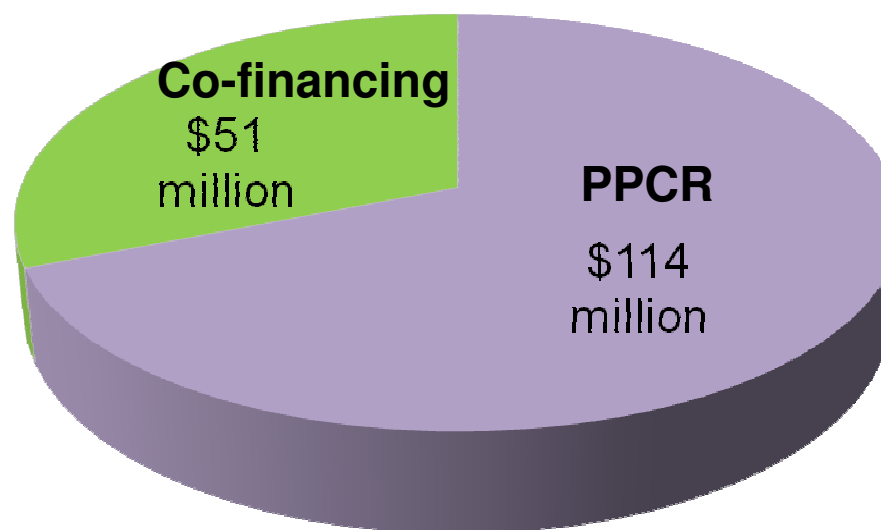


PPCR Hydromet Investments

Countries

- Cambodia
- Grenada
- Nepal
- Niger
- Saint Vincent & the Grenadines
- Samoa
- Tajikistan
- Zambia
- Mozambique
- Jamaica
- Bolivia
- Saint Lucia

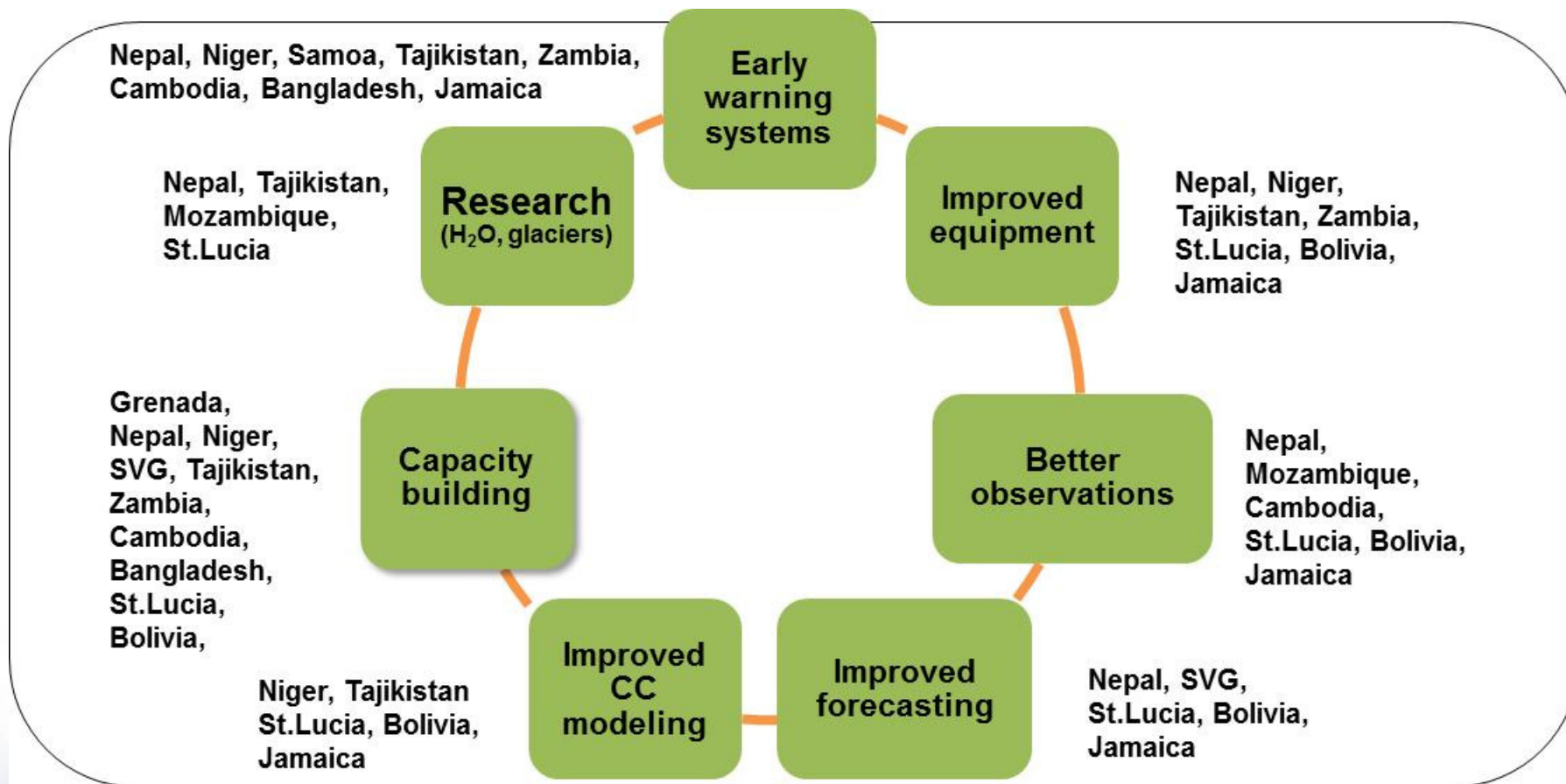
Indicative funding via PPCR



- (i) This excludes sums for large multi-sector projects that do not specify amount for hydromet activity (e.g., Cambodia), and
(ii) for some programs, co-financing is still TBD (e.g., Nepal).



Nature of PPCR Hydromet Investments





Highlights of Bank NMHS operations

Project/component title	Funding (USD)	Status
Mexico: Water Resources Management Project (1996-2002)	41 million	Completed
Dominican Republic: Hurricane Georges Emergency Recovery Project (1998-2002)	10 million	Completed
Poland: Emergency Flood Recovery Project (1997-2006)	62 million	Completed
Turkey: Emergency Flood and Earthquake Recovery Project (1998-2005)	26 million	Completed
Russia: Hydromet Modernization Project – I (2005-2012)	173 million	Implementation
Albania: Disaster Risk Mitigation and Adaption Project. Component 2 (2008-)	1.8 million	Implementation
Moldova: Disaster and Climate Risk Management Project (2010-)	9 million	Implementation
India: Bihar Koshi Flood Recovery Project Component 3. (2010-)	30 million	Implementation
Afghanistan: Irrigation Restoration and Development (IRD) Project (2011-)	5 million	Implementation
Central Asia: Central Asia Hydrometeorology Modernization Project (2011-)	27.7 million	Implementation



Bank operations in the pipeline

Project/component title	Funding (USD)	Status
Mexico: Modernizing the National Meteorological Service to Address Variability and Climate Change in the Water Sector in Mexico	105 million (IBRD)	Approved by the Board
Vietnam: Managing Natural Hazards Project Component 2: Strengthening Weather Forecasting and Early Warning	30 million (IDA)	Appraisal
Nepal: Building Resilience to Climate Related Hazards	31 million (PPCR/IDA)	Pre-appraisal
Russia: Hydromet Modernization Project – II	141.5 million (IBRD)	Pre-appraisal
Mozambique: Strengthening Hydrological & Meteorological Information Services for Climate Resilience	10-15 million (PPCR/IDA)	Preparation
Ghana: Strengthening Hydrological and Meteorological Agencies	15-25 million (IDA)	Identification
Zambia: Strengthening Climate Information System	9.5 million (PPCR/IDA)	Identification
Africa: Climate Risk Management Project	25 million	Identification



Some lessons learned

- NMHSs' links with clients/users are often poor.
- Generic problems of public service in developing economies (low salary, lack of flexibility, uncertainties) are common.
- Fundamental change in NMHS's business model is often needed to improve service delivery.
- Building infrastructure is less challenging than building institutions, strengthening capacity and sustaining them.
- Sustainability of investment is often a major problem.
- Systematic and integrated "end-to-end" approach better than "quick wins" or partial support.
- There is no universal or quick solution to improve NMHSs services:
 - Need for a project flexible design and long-term engagement (10 years or more).
 - Need relevant long-term financial instruments.
- Better coordination between donors and WB is highly desirable.



GFDRR Hydromet Program

- Launched by Urban, Agricultural and Water Departments in May 2011.
- Three pillars of activity:
 1. Analytical Support and Knowledge Management
 2. Capacity Building and Technical Assistance
 3. Support to Portfolio Development and Operations
- Helps mainstream development of modern, sustainable, service-oriented weather and climate information systems into the World Bank portfolio
- Functions as a service center providing analytical, advisory and implementation support to Bank teams and their client governments.



Some GFDRR Hydromet outputs

1. Analytical support and knowledge management

- Draft Report on Natural Hazards and Climate Resilience. Global Overview
- Report on implementation of multi-hazard early warning systems
- Report on the hydromet business models for service delivery

2. Capacity building and development partnerships

- Developed capacity building opportunities for Bank staff
- Shanghai Workshop on Multi-Hazards Early Warning and Decision Support Systems
- Strengthened partnerships with WMO, PPCR, leading NMHSs and global forecasting centers

3. Portfolio development

- Provided main technical support for identification and preparation of weather, climate and hydrological investments in Nepal, Mozambique, Ghana, Yemen and other projects
- Provided support for preparation and launching implementation of hydromet-related projects in Vietnam, Central Asia and Russia



Typical operation

- Institutional strengthening, capacity building and implementation support
- Modernization of observation infrastructure and forecasting
- Enhancement of the service delivery system
- Often supported by:
 - Socioeconomic benefit analysis
 - Recommendations and prioritized plan of improvement of weather and climate service delivery to national users
 - Business and investment planning

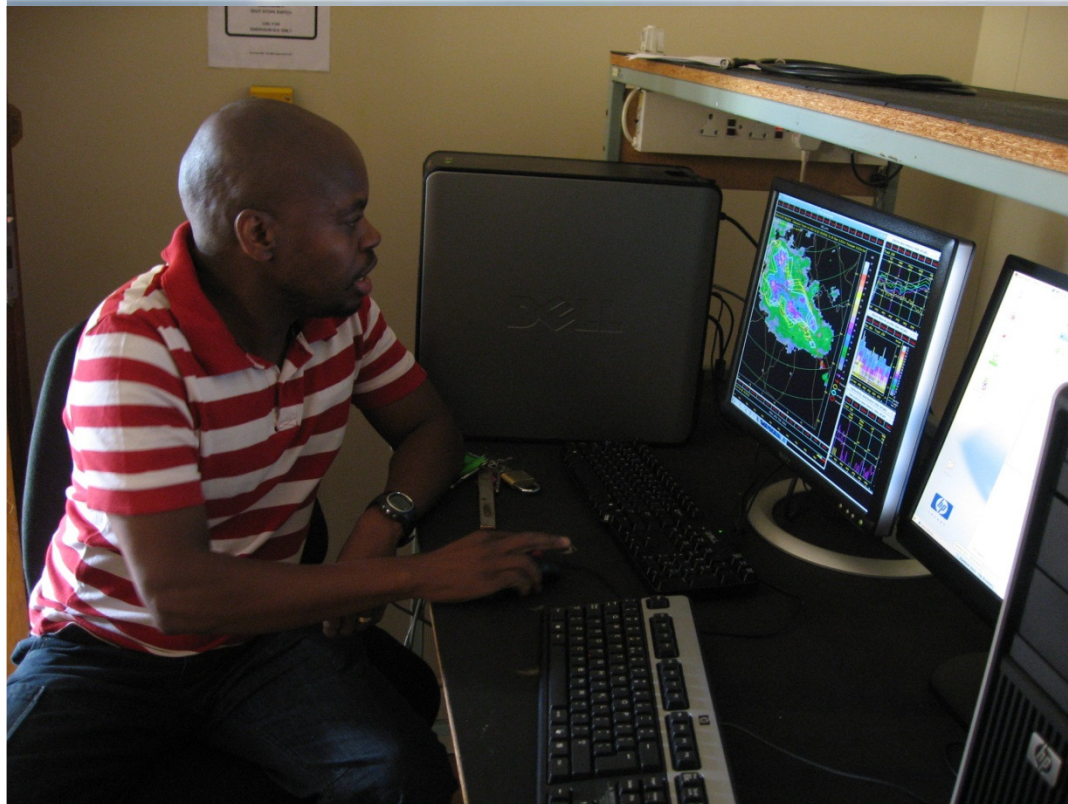


Recommendations

- Analytical work helps to attract attention of decision makers, identification of priorities and building support among stakeholders.
- Learning more about institutions, NMHS capacity and budget are linked.
- Develop proposals for integration of NMHS strengthening in broader sectoral initiatives.
- Test NMHS and government commitment upfront.
- Modernization is a major project for NMHS's management and might be risky for senior management.
- Explain to Ministry of Finance that proposed modernization should come with increased NMHS budget.
- Support only those investments which have a chance to be sustainable.
- Assessment of affordability of operations and maintenance costs is one of primary criteria for new system design.
- Improve service delivery – a key for long-term sustainability.



World Bank Hydromet



Thank You

