Climate Change Adaptation at USAID: Learning from experience

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Setting the stage:
Climate Change and Development

Worldwide increases in net irrigation requirements ranging from 1 to 3% (2.7 – 5.1 million hectares) by the 2020s and 2 to 7% (5.2-18.9 million hectares) by the 2070s

Indian women born during a drought or a flood in the 1970s were 19% less likely to ever attend primary school

Bangladesh: 1 meter of sea level rise could flood 17.5% of the country's land area

Niger: children aged two or under who were born in a drought are 72% more likely to be stunted

Ethiopia: GDP growth closely tracks rainfall variation

Peru: uncertainty over future hydropower capacity fed by projected glacier melt has led the government to curtail exports of natural gas

Studies project a 95% chance that production of **Southern African** maize and wheat will be harmed in the absence of adaptation
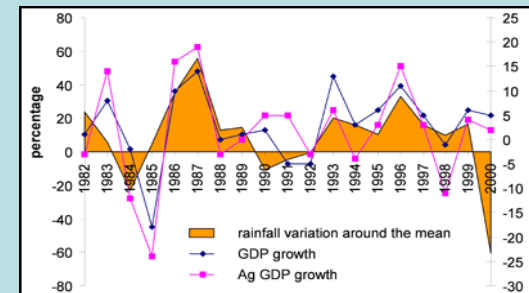
Presidential Climate Change Initiative

- Among Administration's top priorities

- New in FY10, result of Copenhagen Accord "Fast Start Funding" pledge of $30 billion by 2012, reaffirmed in Cancun

- $1.3 billion commitment in 2010, USAID to deliver ~1/4

- Accelerating learning through the Adaptation Partnership

Administrator Shah Letter to Mission Directors, May 2010
"Even if your mission will not receive dedicated FY 2010 or 2011 climate funds, I ask that you consider how climate will impact your work in such areas as food security, water, and health, and where co-benefits may exist."

USAID's Global Climate Change Initiative

Overall Goal: Assist countries as they develop in ways that reduce emissions while building resilience to climate change impacts

Three Pillars

Adaptation: Building capacity in vulnerable countries and communities to prepare for, reduce, or cope with negative impacts of climate change.

Clean Energy: Reducing GHG emissions by spurring deployment of clean energy, energy efficiency, low-carbon technologies, clean transport, energy sector reforms.

Sustainable Landscapes: Reducing GHG emissions from deforestation and degradation, increasing sequestration, including building capacity to measure, report, and verify emissions reductions (REDD+)

Adaptation Guidance

Science and analysis for decision-making:

- Monitor and assess climate and impacts, communicate climate information, generate and interpret analysis

Governance for climate resilience:

- Effectively coordinate response, educate and engage stakeholders

Implementation of adaptation solutions:

- Develop adaptation strategies in relevant sectors (water, agriculture, infrastructure, etc.) and implement risk reduction

+ Aligned with national development priorities

+ Must build on and/or conduct climate vulnerability assessment to rationalize program choices

2011 GCCI Budget & Africa

Adaptation	Clean Energy	Sustainable Landscapes
137 million	120.5 million	142.5 million
AFRICA		
Ethiopia	Kenya	Ghana
Kenya	South Africa	Malawi
Malawi	East, Southern, West Regional	Zambia
Mali		West, Central Regional
Mozambique		
Rwanda		
Senegal		
Tanzania		
Uganda		
East, Southern, West Regional		
42 million	**26 million**	**26.5 million**

Problem description:
Climate and Economic Growth

- Developing country economies concentrated in climate-sensitive sectors: Agriculture, fisheries, tourism

- ~70% of developing country populations derive income from agriculture

Ethiopia: Rainfall, GDP, and Ag GDP
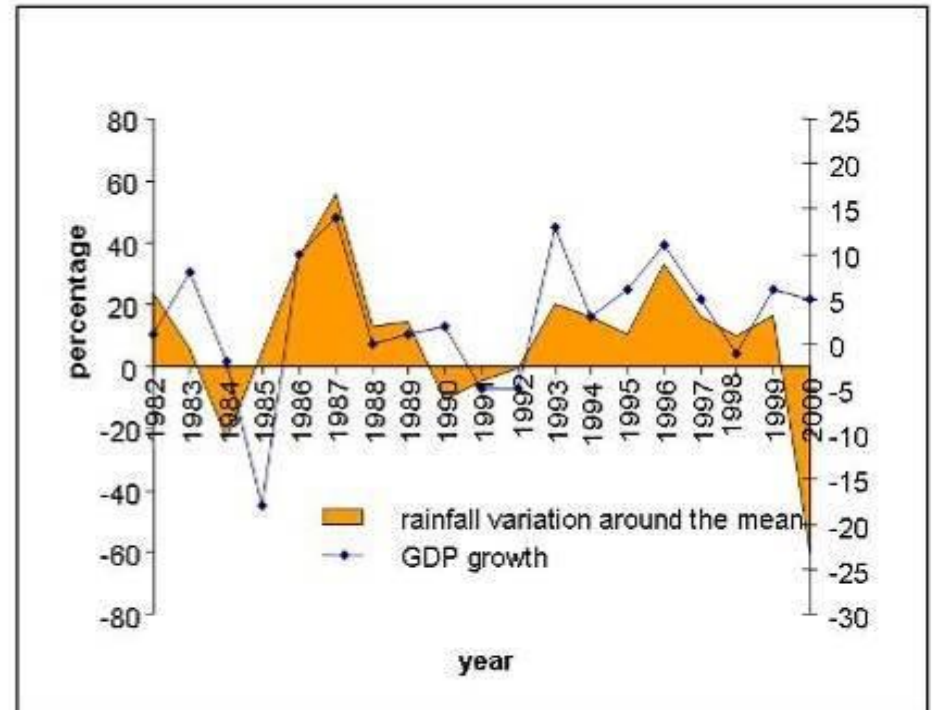
Source: The World Bank. "Managing Water Resources to Maximize Sustainable Growth: A Country Water Resources Assistance Strategy for Ethiopia." 2005.

Lessons Learned: Climate Vulnerability in Context

Goal: Increase agricultural productivity

Inputs: seeds, ground and rain water, soil, energy, information, infrastructure, labor, equipment, etc.

Stresses

Non-climate:
• Poor infrastructure
• Degraded soil
• Lack of financing
• Lack of inputs

Climate:
• Increasing rainfall variability
• Extended drought
• Increasing pests
• Higher evapotranspiration

Vulnerability factors

Exposure

What
• Crops to heat, drought
• Groundwater to less rain
• People to food insecurity
• Roads and soil to intense rain

Sensitivity

• Maize to temperature
• Poor infrastructure to heavy rain
• Under-nourished to food shortage, heat stress

Adaptive capacity

• Forecasts to inform planting, harvest
• Availability of multiple water sources
• Crop insurance

Potential impacts

• Declining yields
• Damaged roads disrupting market access
• Food insecurity
• Conflict over land, water

Response options

• Provide forecasts to farmers
• Improve soil water content
• Increase water, fertilizer use efficiency
• Diversify crops and income sources
• Training/outreach on improved techniques
• Provide crop insurance
• Harvest rainwater?

West Africa Climate Services

Objective: Supporting user-tailored, co-developed, appropriately translated and delivered weather and climate information for decision-makers

Translation, demonstration

Providers: Regional hydro-met organizations, researchers, NOAA

Intermediaries: met departments, farmer extension, NGOs

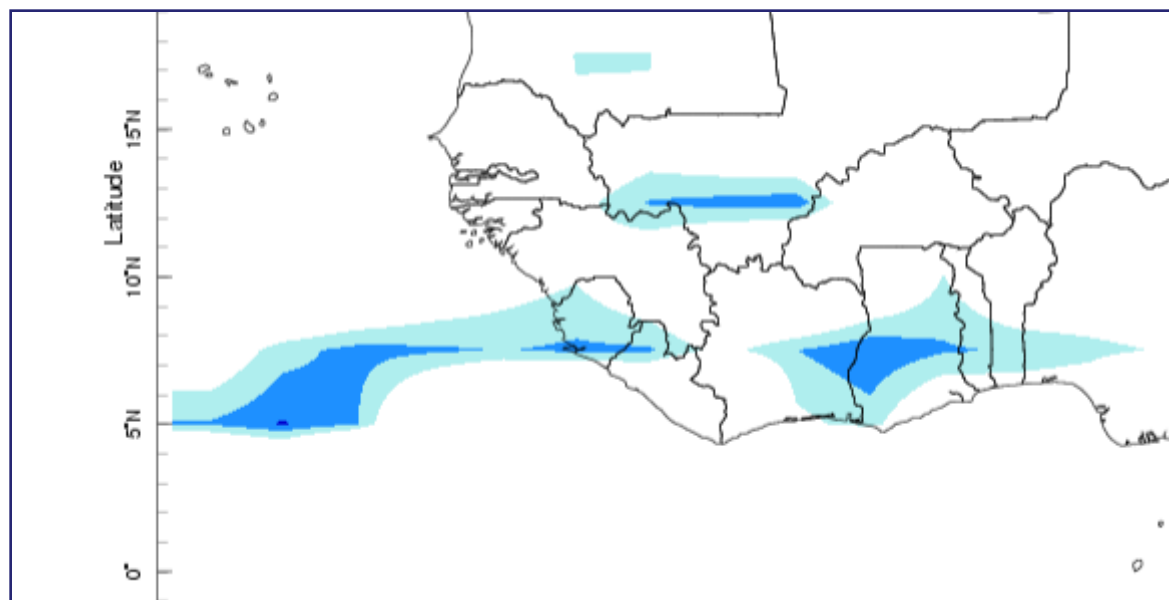**End users**: farmers, basin managers, parks, disaster managers, banks

Forecasts for the Next 6 Days

○ How much rain is expected cumulatively?

○ Where is it expected to be wetter than average?

◉ Where is unusually heavy rainfall expected?

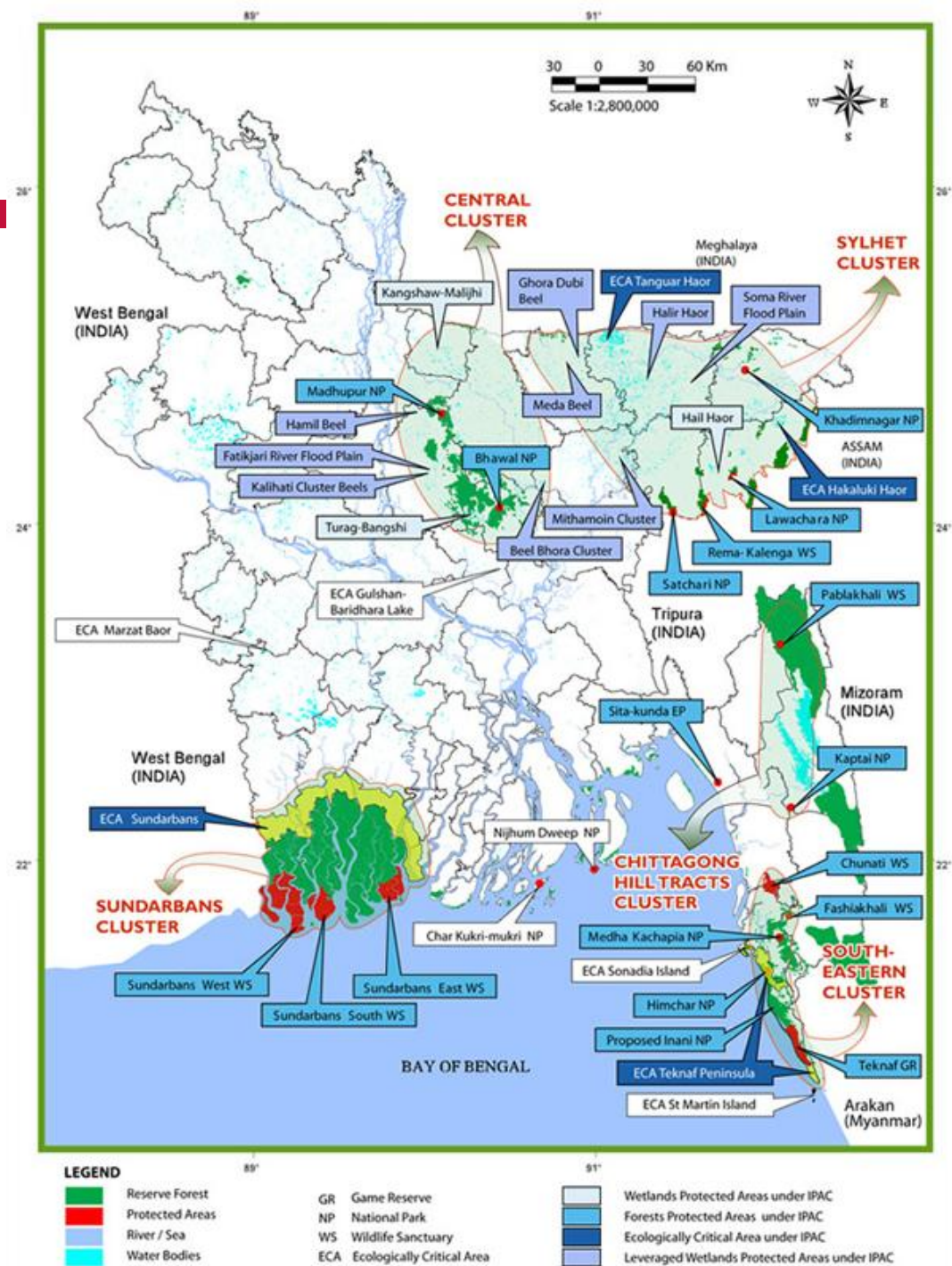○ How heavy is the rainfall expected to be?

http://iridl.ldeo.columbia.edu/maproom/.IFRC

Bangladesh

- Existing IPAC network of protected areas co-management orgs

+ Adaptation:

- Beyond PAs, understanding water flows with climate change (seasonality, salinity, drought, flood, etc.)

- Identifying livelihood, settlement, and habitat adaptation options at multiple scales

What's Needed – What Success Looks Like

Biodiversity, conservation contributing to economic and social resilience

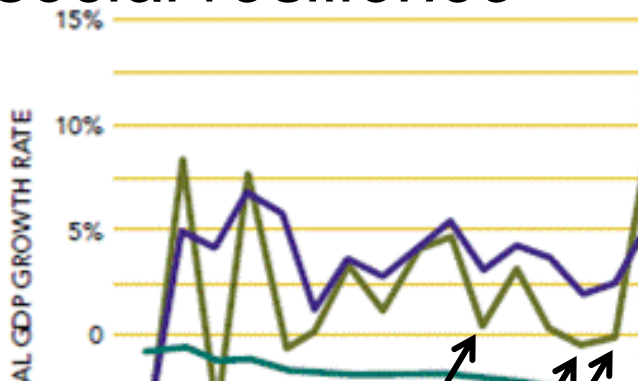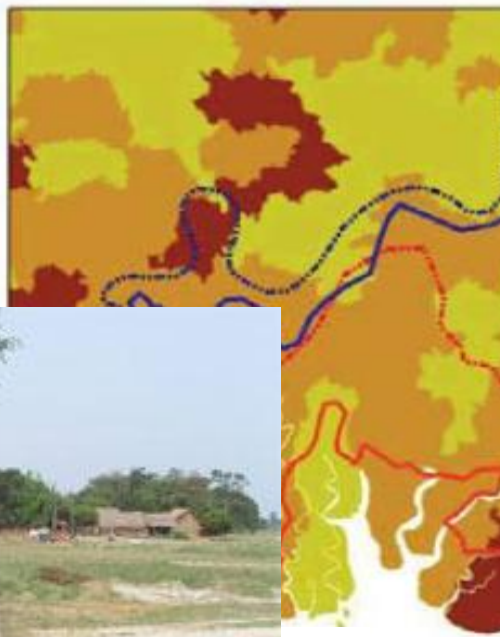Growth trends in total GDP and Ag GDP in relation to major floods, Bangladesh

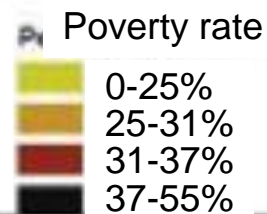FIGURE 3.6 POPULATION UN...

Baseline – High risk 1-3m
Baseline – V high risk <3m
CC – High risk 1-3m
CC – V high risk <3m

Poverty rate
0-25%
25-31%
31-37%
37-55%

Thank you

Online: www.usaid.gov/climate

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