



Climate Finance Accounting for Agriculture and Natural Resources (mostly adaptation)

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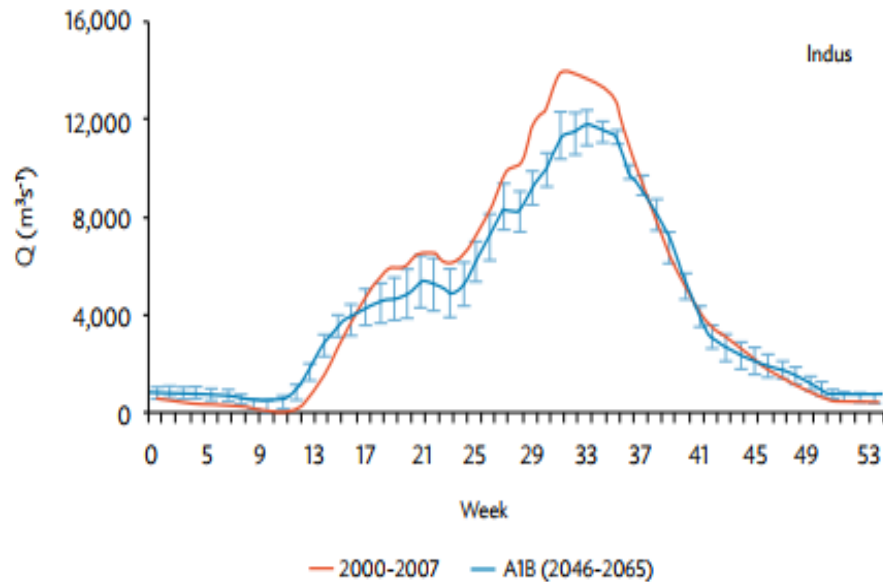
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Agriculture and water sectors likely to be primary avenue of risk from climate change

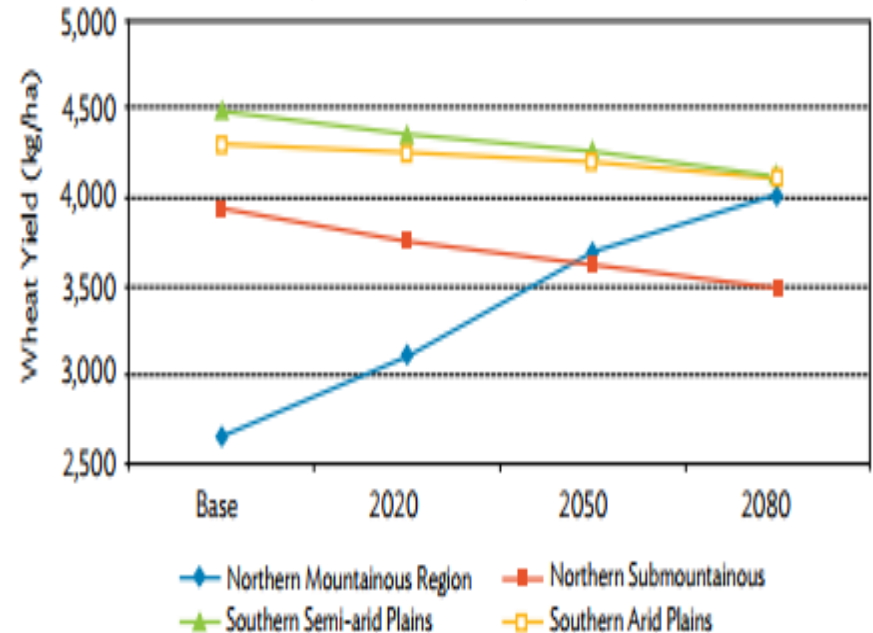
Less water may be available in key periods

Upstream discharge (present and future) for Indus Basin



Crop yields may decline due to increased temperature

Projected wheat yield in Pakistan





In short, adaptation in projects is addressing vulnerabilities and exposure to climate change

- Reduce physical impacts from variability and extremes
 - Conservation, storage, protection infrastructure
 - Increase engineering specifications
- Increase and reduce variability of income of most vulnerable
 - Modern infra, cultural methods, and technologies
 - Financial products and business development
- Improve planning and response systems
 - Information and risk management
 - Institutional coordination and mobilization

\$250 million adaptation finance in 2017 from ANR, roughly 15% of project finance. \$1 billion targeted for 2020.



Adaptation finance is not just accounting, but an issue of rationale, design, narrative

Type 1: “Climate Proofing”

- Project rationale does not focus on climate
- Climate assessment during TRTA
- Adaptation finance is incremental cost only – could be very small!

Type 2: “Climate Programming”

- Climate is a primary rationale
 - e.g government policy, stakeholder consultation
- Climate assessment may be done prior to concept (and in TRTA)
- Adaptation is 100% of cost of all or some components
- Clear links from climate rationale to outputs to DMF indicators

Achieving finance goals will likely require fewer Type 1 and more Type 2 projects



The MDB common methodology for tracking adaptation finance

in 3 steps:

1. Establishing Climate Vulnerability **Context**
2. Explicit Statement of **Intent**
3. Climate Risk and Project Activity **Linkages**

GOOD PRACTICE DEVELOPMENT ISN'T ENOUGH!



1. Establishing Climate Vulnerability Context

- Document in Rationale the climate conditions and risks
- Provide robust evidence through risk screening/CCA
- Details in Climate Change Assessment report(s)



BAN: Coastal Towns Environmental Infrastructure Project

“Climate change is a critical development issue for Bangladesh. The country’s low-lying coastal zone ... is highly vulnerable to cyclones, storm surges, sea level rise, and salinity intrusion. A 1.5°C increase in temperature and 4% increase in precipitation ... would potentially result in sea levels in the Bay of Bengal rising by 27 centimeters or more by 2050.

Warmer temperatures would result in more frequent and intense cyclones and storm surges, damaging roads and bridges and rendering existing drainage, water supply, and sanitation systems ineffective, as well as threatening public health and safety...

The poor and women are disproportionately affected and have the lowest capacity to cope with losses. There is a high demand for climate-resilient infrastructure and disaster preparedness to improve the wellbeing of residents and reduce migration to larger cities.”

Source: RRP, paragraph 4





2. Statement of Intent

- Project intends to address climate risks as a specific aim or objective
- Include in Rationale, Impacts/Outcome/Outputs



BAN: Coastal Towns Environmental Infrastructure Project

“The project is prioritized in the government’s Strategic Program for Climate Resilience (2010) under the Pilot Program for Climate Resilience, and will demonstrate new approaches for integrating climate resilience into urban development in coastal pourashavas.”

“Priority infrastructure will fill critical deficits to strengthen climate and disaster resilience. ... Infrastructure will be designed considering climate projections for the year 2040. The project will develop climate-resilient community infrastructure in poor, vulnerable areas as part of larger infrastructure contracts.”

Source: RRP, paragraph 3 and 11.



3. Project activities addressing climate risks

- Articulate specific activities which are used to achieve the aims and objectives
- Description of the adaptive activities should be in the TA report, outputs and due diligence of the RRP
- Details in the Climate Change Assessment, PAM, etc.



BAN: Coastal Towns Environmental Infrastructure Project

“Climate-resilient measures will include, but are not limited to, increasing drainage capacity; raising infrastructure levels for roads, cyclone shelters, water and sanitation facilities; and identifying non-saline water sources.”

“Capacity building support will strengthen the ability of pourashavas to prepare and respond to climate-related risks and disasters by (i) reviewing and updating the urban master plans, local building codes, and engineering design standards of LGED and DPHE to incorporate climate change and disaster resilient measures; (ii) improving water safety planning and groundwater monitoring through the development of water safety plans and guidelines; and (iii) establishing disaster management standing committees in each pourashava, and delivering appropriate technical training for the members of such committees.”

Source: RRP, paragraph 11 and 14

Adaptation finance: \$6.2 million of \$52 million (11%)



DMF indicators should capture risk mitigation, but be careful with high variance outcome indicators

Subsector	Sample Indicators
Irrigation	<ul style="list-style-type: none">• All irrigation infrastructure includes climate resilient design features like additional freeboard [output]• Agricultural management plans developed [output]• Water productivity increased xx m³/ha [outcome]
Flood Management	<ul style="list-style-type: none">• Storage capacity of reservoir is increased by xx m³ [output]• Flood embankments elevation increased to xx m [output]• Diameters of pipes increased by xx% [output]• Number of households protected increased to X [outcome]• Flood damages reduced by xx %/ \$ xx in coverage areas [outcome]



DMF indicators

Subsector	Sample Indicators
Wastewater	<ul style="list-style-type: none">• X number of treatment plants built to address increasing surface water temperatures [outcome]• Pump stations raised and levees built to avoid rising sea levels from rendering the plants inoperable [output]• Reliability of treatment increased to X% [outcome]• Incidence of bacteria reduced by X% [outcome]
Institutional Development	<ul style="list-style-type: none">• XX number of farmers (of which xx % are women) are trained in land and water management response to increased climate variability [output]• Early warning system for flood risk management designed, installed and implemented [output]• Annual disaster impacts reduced by X% [outcome]



Impact statement can capture government policies and priorities

- National climate strategy
- National sustainable development strategy
- Nationally-Determined Contributions to UNFCCC Paris Agreement



Recap on key issues for processing

- Concept stage
 - Rationale – context and intent
 - Do climate risk screening early
 - Appropriate TOR for climate assessment in TRTA
 - Include risk, finance, and CO2 reduction in project at a glance
- RRP
 - Good narrative from rationale to impact/outcomes to outputs
 - Consider appropriate DMF indicators
 - Details in Climate Change Assessment LD/SD
 - Update project at a glance!



Some project elements may be difficult to categorize as adaptation

- **Policy change:** water tariff change from seasonal flat fee to usage based
- **Regional food trade liberalization** and logistics investments to improve of flow of food that reduce the risks of food price hike
- **RBLs, PBLs**
- **FI loans:** sub-loans unknown

Some flexibility - rationale, narrative, and DMF and DLIs are critical. Can use rough percentages.



Qualifying Activities for Tracking **Mitigation** Finance in ANR Sector

Crop Production:

- Switching to soil management techniques that have demonstrated reduction of GHG emissions
- Reduction of non-CO2 GHG emissions from agricultural practices (e.g. paddy rice production, reduction in fertilizer use)

Irrigation and water management:

- Replacing old water pumps with more energy efficient pumps
- Reduction in energy use in traction (e.g. efficient tillage), irrigation, and other agricultural processes

Forestry and Land Use:

- Afforestation (plantations) on non-forested land; Reforestation on previously forested land; Avoided deforestation
- Peat land restoration, or wetland management to reduce methane release and rangeland management to increase carbon sequestration



Examples of project adaptation



Type 1

PRC: Qinghai Haidong Urban-Rural Eco Development Project

During the PPTA, the incremental costs for the specific adaptation measures that were included in the project was calculated to be \$9.44 million. This covers the cost of:

- Adjusting additional 0.1m increase in design flood height for the river rehabilitation component;
- Adjusting additional 0.2m increase in design flood height for the river rehabilitation component;
- Enlarging the storm water outlet size by 8% based on design storm discharge; and
- Adjusting the runoff depth in solid waste disposal (landfill) design due to an expected increase in the 50-year return storm from 32mm to 34mm; and adjusting the 100-year storm from 39 mm to 42mm.



Type 2

VIE: Water Efficiency Improvement in Drought Affected Provinces

Accepted as predicated on climate variability and change, therefore, 100% of ADB lending can be counted as climate financing (\$120 million)

The project, which aims to improve water productivity in Viet Nam's agriculture sector, was requested by the Vietnamese government after the 2015 El Niño effect caused severe drought conditions. Rainfall in 2015 wet season was 32% less than an average year. About 60,000 has of agricultural land was subject to varying degrees of crop failure in 2015. Likely long-term climate scenario is increase of 0.8°C to 0.9°C annual mean air temp, with little change in rainfall.



Type 1 & 2

PRC: Jiangxi Xinyu Kongmu River Watershed Flood Control and Environmental Improvement Project

Activity	Est. Cost (\$M)
Infrastructure to increase flood retention capacity of rivers and lakes (levees, embankments, etc.)	3.97
Incremental cost of storm water network pipe thickness increase due to possible ground subsidence	0.95
Incremental cost of new material selection for sewage network and change in pump station design	0.98
Climate proofing components (non infrastructural)	4.90
Total incremental costs	10.80
Pro-rated finance charges	0.45
TOTAL climate finance	11.25



Thank you.

