

Financing Adaptation in Agriculture and Water Sectors in Asia: An Overview

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Outline

- Rationale
- Guiding Principles for Adaptation Finance
- Financing needs
- Mechanisms in the Current Regime
- Proposed Mechanisms for the Future Regime
- Concluding Remarks

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Why is funding for adaptation in agriculture & water sectors crucial?

- Continued **reliance** of Asian economies in terms of livelihoods (even if proportion of GDP is declining)
- High **sensitivity** of sectors to climate change
- Looming **food and water insecurity**
- **Declining resource** flows to both sectors
- **Inter-relatedness**
 - Food and water security vs. energy and social security
 - Biomass for energy is water-intensive
 - Desalination & energy use

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Water Security and Climate Change

- “Water security links together the web of food, energy, climate, economic growth and human security challenges We simply cannot manage water in the future as we have in the past, or the **economic web will collapse**.” (World Economic Forum Water Initiative paper for Davos, 2009)
- “Water resource issues have not been adequately addressed in climate change analysis and climate policy formulations. Likewise, climate change problems have not been dealt within water resource analysis, management and policy formulation” (Bates et al., 2008).

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Which adaptations do need funding?

- Some adaptations **do not have major financial implications** – policy-driven, institutional reform, behavioral changes.
- Some costs are borne by agricultural or water sector users, and they “finance” their own adaptation.
- Some investment is of the “soft” type, e.g. information, research, policy – **Asia desperately needs!**
- But “hard infrastructure” also required, with **major financial implications** e.g. multipurpose storage schemes, irrigated & rainfed agriculture – **Again Asia is critically short of this.**

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Adaptations to Hard Infrastructure

- **Upgrading existing** infrastructure
 - Protective infrastructure: strengthening dams, coastal defenses
 - Non-protective infrastructure: reinforce roads, improving water management to cope with flood risks and water shortages;
- **Designing new** infrastructure
 - Protective infrastructure: New dams and reservoirs;
 - Non-protective infrastructure: Heat resistant and permeable roads (rainwater can percolate easier, smaller risk of inundation); hydropower infrastructure, water supply and demand infrastructure;

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Guiding Principles for Adaptation Financing

Fund Generation	Fund Utilization
<ul style="list-style-type: none"> • Adequacy • Additionality • Predictability (automatic accrual) and reliability • Sustainability 	<ul style="list-style-type: none"> • Appropriateness (compensation not aid) • DC Ownership • Effectiveness (M&E metrics) • Absorptive Capacity • Governance • Professionalism • Accountability • Transparency

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Estimated Costs of Adaptation in Developing Countries (worldwide)

- Stern Review (2006): **\$4-37 billion (B) /year**
- World Bank (2006): **\$9-41 B/year**
- Oxfam (2007): at least **\$50 B/year**
- UNDP (2007): **\$86 B/year** by 2015
- UNFCCC (2007): **\$28-67 B/year** by 2030
- UNFCCC (2008): **\$70 B/year** by 2020

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Financing needs for adaptation in agriculture and water sectors

- Agriculture: **\$14 billion/year**
- Water sector - **\$23 billion/year (USD 531 billion from now to 2030)**
- Water supply/conservation: **\$11 billion/year**
- Coastal zones: **\$11 billion/year**
- LDCs: (38 NAPAs)
 - Agric (104): \$270 M; Water (57): \$141 M; Coastal (34): \$96 M
- Water for Agriculture: Capital and recurrent costs in water-resource related management to achieve the **MDG hunger goal**:
 - 2005-2015: \$47 billion/year
 - 2015-2030: \$67 billion/year
 (Mostly irrigation development, lesser sums for upgrading rainfed, agricultural research & extension)

Sources: McCarl 2007; Kirshen 2007; UNFCCC 2008; **SR 1308**

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Funding Mechanisms in the Current Regime

- UNFCCC Funds
 - GEF Trust Fund
 - Least Developed Countries Fund
 - Special Climate Change Fund
- Adaptation Fund (Kyoto Protocol)
- Other UN Conventions
 - Convention on Biological Diversity
 - Convention on Wetlands
 - Convention to Combat Desertification
- IFI Adaptation Funds
 - World Bank: Strategic Climate Fund (SCF) with a Pilot Program for Climate Resilience (PPCR)
 - ADB: Climate Change Fund, SGA, Water Financing Partnership Facility
- Bilateral Funds

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Current Mechanisms

GEF: \$50 million (M) SPA over 5 years – Fully committed already
 Share of Asia: 27% – \$13.7 M (Kiribati: 2.1; Sri Lanka: 2.1; India: 4.4; Tajikistan: 1.1; Southeast Asia: 2; Pacific: 2)

LDC Fund: (Nov. 2008) Pledged amount: 172.4 M
 Paid: **131.2 M** Approved allocations: 53.5 M
 Commitments: 18.7 M Disbursements: **12.8 M**
 Share of Asia in approved allocations: **18.4 M**
 (Bangladesh: 3.7; Bhutan: 4; Cambodia: 2.1; Samoa: 2.2; Tuvalu: 3.4; Vanuatu: 3)

SCCF (Nov. 2008) Pledged amount: 106.6 M
 Paid: 94.4 M; Tech. Transfer: 16.2; **Adaptation: 78.2**
 Approved allocation: 68.6 M
 Commitments: 30.7 M Disbursements: **15.3 M**
 Share of Asia in approved allocations: 31.6 M
 (China: 5.8; Mongolia: 1.8; Philippines: 5.8; Pacific: 14.8; Viet Nam: 3.4)

Total GEF funds for adaptation since 1991: **-330 M**
 Allocations: **-172 M** Disbursements: **-78 M**

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Typical GEF Projects in Asia

- LDCF: Cambodia **Building Capacities to Integrate Water Resources Planning in Agricultural Development**
 UNDP PIF Approved 2.14M Co-financing: \$1.95M
- SCCF:
 - China Mainstreaming Adaptation to Climate Change Into Water Resources Management and Rural Development (World Bank) - \$5.8M; Co-financing: \$50M
 - India Climate-resilient Development and Adaptation (UNDP) - \$5.7M (in the pipeline)
 - Philippines Climate Change Adaptation Project (World Bank) - \$5.8M Co-financing: \$25.4M
 - Vietnam Climate-resilient Infrastructure Planning and Coastal Zone Development in Vietnam (ADB/UNDP) \$3.4 Co-financing: \$180M
 - Regional: Pacific Islands Adaptation to Climate Change Project (PACC) UNDP 14.8

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Bilateral initiatives

- **Japan** – Cool Earth Partnership
- **Korea** – East Asia Climate Partnership
- **Australia** – MRC Climate Change Adaptation Initiative
- **European Commission** – Global Climate Change Alliance (GCCA)
- **United Kingdom** – International Window of the Environmental Transformation Fund (ETF-IW)
- **Spain** – Millennium Development Goals (MDG) Fund
- **Germany** – International Climate Protection Initiative
- **Norway** – Agency for Development Cooperation (NORAD) Rainforest Initiative

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Other funding sources

- **Public** investments (Asian governments)
- **Private** investments (Estimated to cover 86% of global adaptation costs in developing countries)
 - Regulations and standards
 - Taxes and charges
 - Subsidies and incentives for innovation
- **Insurance**

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Efforts to Bridge the Adaptation Funding Chasm

- Projects that have been **classified as contributing to adaptation** (including ODA's component & pledges)
 - Bilateral assistance (2001-2011) ~\$4.5 B
 - UN Agencies (2001-2011) ~0.6 B
 - MDBs (2001-2011) ~\$1.7 B
 - **Annual flows: ~\$680 M** (of which \$570 M are pledges for the future) Source: Ryden & Cunill (2009)
- **Domestic resource flows** (unspecified amounts to adaptation):
 - China (part of Levy on CDM – 65% on HFC; 35% N₂O; 2% Others)
 - Bangladesh (Multi-Donor Trust fund)
 - Sri Lanka (environmental tax)

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Potential for Adaptation Fund

- **Adaptation Fund** (2% levy on CDM + voluntary contributions)
 - \$36 million (M) per year at 2008 levels of CDM activity
 - \$80-300 M (2008-2012)
 - To be operational in June 2009 with monetization of first batch of Certified Emission Reductions (CER)
- **If continued beyond 2012:**
 - \$200-680 M **by 2020** (EU)
 - \$100-500 M (low carbon credit demand scenario) to \$1-5 B/yr (high demand scenario) **by 2030**

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Proposed Funding Mechanisms for Adaptation in the Future Climate Regime beyond 2012

I. Global Market-based Levies

- Increasing **levy on CDM** (e.g. from 2 to 5%) – \$0.3-1.7 b/year in 2020 (Bangladesh & Pakistan) 5% levy = \$200-750 M (2008-2012)
- **Extending levy to other market mechanisms** (IET and JI) – 10-50 M (2008-2012); 300 M–2.25 B/year after 2012
- Currency transaction development levy (**Tobin tax**) – 15-20 B/year
- Air travel and Shipping Levies
 - International air travel levy @ \$ 7-10/ticket (\$8-14 B/year) (LDCs)
 - Solidarity Tax on air travel (France)
 - Levy on marine bunker fuels (\$4-15 B/year) (LDCs)
 - Auctioning of allowances for international maritime and aviation emissions (\$22-40 B/year) (Tuvalu)
- Levy on REDD funds (5% ~ \$600 M)
- Agricultural carbon storage payments similar to REDD

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Other Proposed Mechanisms for Adaptation Funding - 1

I. Global Market-based Levies (Contd.)

- **World Climate Change Fund**– All countries contribute and receive based on GDP, GHG & Pop. – Adaptation levy of 2% from all disbursements from the fund may generate up to **\$1.9 B/year by 2030 (Mexico)**
- **Taxing \$2 per t CO₂** with a basic tax exemption of 1.5 t CO₂ per person - **\$18.4 B/year (Switzerland)**
- Global fossil fuel tax
- International CSR
- Adaptation credits
- Ad-Mit Credits and **Premium Carbon Credits**
- Adaptation Vouchers and Adaptation Certificates

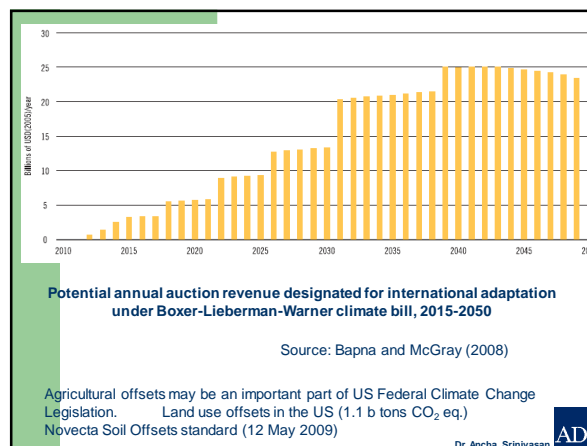
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Other Proposed Funding Mechanisms for Adaptation - 2

II. Regional and National Market-based Levies (in Developed countries)

- Auctioning a portion of Annex I emission allowances - \$15-25 B with 2% of AAUs (Norway)
- Levy on fossil fuel sales in Annex I (Tuvalu 2005)
- Portion of income from border tax adjustment measures (based on carbon intensity) by Annex I
- Auctioning a portion of EU-ETS allowances (\$2.3 billion/year by 2020)
- Business adaptation (e.g. EU wine industry - CLAWINE)
- US Congress – Boxer-Lieberman-Warner bill \$3-25 b/year (proposed but failed)

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Waxman-Markey discussion draft (Section 491-496 p. 632) The American Clean Energy and Security Act of 2009

- Establishes an International Climate Change Adaptation Program within USAID, working with EPA and State
- Up to 1.5 billion tons of international offsets per year within the cap-and-trade system
- Dedicates resources to addressing the critical adaptation needs of poor and vulnerable countries
- Not more than 10% of the available funds can be spent in one country in any year
- At least 40% and up to 60% of the funds available to the Program shall be distributed to international funds created under the UNFCCC

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Other Proposed Funding Mechanisms for Adaptation - 3

III: National Market-based Levies in Developing countries

- Carbon tax
- Tax on exports of carbon-intensive products
- CSR
- Domestic aviation tax
- Portion of proceeds from energy production tax credits, investment tax credits, enhanced capital allowances, research and development tax credits

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Funding Mechanisms for Adaptation and Disaster Risk Management

- Index-based crop insurance systems (India, Thailand)
- Weather hedges
- Catastrophe bonds
- Combined micro-insurance and microcredit (loans linked to adaptation e.g., buying drought-resistant seeds)

Note: Insurance can incentivize adaptation but it is not a panacea.

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Current Problems with adaptation financing

- Funding is insufficient, unpredictable, unreliable, and voluntary (not obligatory)
- Duplication of activities
 - Overlap (of objectives) among PPCR, AF, GEF funds
 - Funding overlap among bilateral initiatives
 - Level of harmonization?
- Competition among funds for donors
- Diversion from ODA
- Limited absorption (disbursement) capacity of the recipient governments

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What needs to be done?

Agreement at Copenhagen(COP15) that can **create an overarching architecture with institutions, instruments and incentives** to

- **Scale up efforts** with greater urgency so that funds for adaptation are
 - Sufficient (*Additional to ODA*)
 - Predictable (*Bypass national budget*)
 - Fair and equitable (*Grants, not loans*)
 - Effective (target the most vulnerable)
- Improve **policy coherence**
- Promote **independent coordination** and
- Bridge the **North and South** in carrying out measures for the global environmental benefit.

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Concluding Remarks

- Adaptation financing is a major challenge for all countries, but more so for **developing Asia**. **No single mechanism** can bridge the adaptation funding chasm.
- New adaptation funding instruments needed (*regional approach?*) especially for the **agricultural and water sectors**.
 - Pay serious attention to use **indigenous knowledge** for adaptation
 - Finance **local initiatives** for natural resource conservation and use
 - Encourage local **financial institutions** to provide credit on timely and at low interest rate
 - **Sectoral budgets** may be necessary to support the most vulnerable.

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Concluding Remarks

- **Mainstreaming adaptation into ODA** is crucial but ODA is unlikely to provide “new and additional” adaptation funds.
- **Governance of funds** is as important as **fund generation**.
- Agreement on a new mechanism for agric. and water adaptation at global level may depend largely on the **US initiative**.

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Thank You!

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