Understanding Long-Term Finance Needs of Developing Countries

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Main Messages

- Climate change financing needs of developing countries exceed by at least 5-10 times current and prospective flows

  $600 to $1,500 billion a year vs $100 b/year

- While there are a variety of estimates and approaches to estimating needs, there is a degree of convergence in the magnitudes among different studies

Mitigation –Estimates of Global Costs

- IEA (2010) “Blue Map” scenario
  - up to 2030 $750 billion a year
  - 2030-2050 $ 1,600 billion a year
- Global Energy Assessment (2011)
  - 2010-2050 $ 1,700-2,100 billion a year
- Edenhofer et al. (2009) “RECIPE”
  - up to 2030 $480 – 600 billion a year
  - in 2050 $1,200 billion a year
- Mckinsey (2009) Pathways to a Low-Carbon Economy
  - in 2020 $ 660 billion a year
  - in 2030 $1,000 billion a year

Mitigation - 1

- UNFCCC (2009) expert group on technology
- Global additional financing required

  $300 to 1,000 billion a year until 2030

- Developing country share in costs of technology deployment and diffusion *(excl. research and development)*

  $182 to 505 billion a year

  +more with R&D+

Mitigation - 2

- World Bank Development Report 2010
- Incremental mitigation costs in development countries

  $140 to 175 billion a year
- “Associated financing needs”

  $265 to 565 billion a year

Mitigation - 3

- UNDESA (WESS 2011)
- Global investments for energy transformation

  $1,800 billion a year

- Developing country requirements

  Energy transformation - $1,080 billion a year

  Agric. investment 20 billion a year

  Total $1,100 billion a year

Mitigation – Bottom Up Estimates

- India (Centre for Science and Environment 2010) - 6 key sectors

  $10 billion a year for power sector alone

- China (Human Development Report 2009/10)

  2010-2050 $ 240 – 355 billion a year

  pattern of increasing cost as economy grows

2030	269	269
2050	523	1,584

Adaptation - 1

- UNFCCC (2007) developing country needs

  $27 to 66 billion a year

- World Bank (2010)

  $75 to ~100 billion a year

  of which in a $102 b a year “wetter” scenario

  East Asia/Pacific - $29 b
  South Asia - 17
  Latin Am/Caribbean - 23
  Sub-Saharan Africa - 19
  Europe/Cent. Asia - 11
  Middle East - 4 (rounding errors)

Adaptation – 2

- Parry *et. al* (Imperial College 2009) Peer reviewed Evaluation of UNFCCC estimates

  (Parry former IPCC co-chair working group on impacts, vulnerabilities, and adaptation)

  - missing important sectors – ecosystem services, mining, manufacturing, energy, retail, finance, tourism

  - underestimation by 2-3 times in each included sector

- Water (adapting to floods not included)
- Infrastructure – low infrastructure levels to continue in Africa and LDCs
- Residual damage (Dlugolecki 2007)

Adaptation - 3

- More realistic estimate of adaptation costs
- Fuller cost: 2.5 times UNFCCC range
  $68 – 165 billion a year $165
- Ecosystem services $65 – 300 billion a year
  one half of maximum - 150
- Residual damage - $200 billion a year
  2/3 of maximum residual damage 133

  Total 448

  or approximately $ 450 billion a year
- Still excluding mining, manufacturing, tourism, etc.

Adaptation – Indicators from Disasters

- Loss of life, homes, infrastructure, livelihoods
- BP Deepwater Horizon - $ 7.8 billion

  (excluding claims from public sector entities)
- Pakistan 2011 floods, 14 million affected,

  $10-15 billion for reconstruction (MSNBC)
- Thailand 2011 floods, $46 billion (WB 2011)
- US 2011 Mississippi flooding, $9 billion (WSJ)

Mitigation & Adaptation

- Developing Country Needs

- Mitigation $500 to 1,100 billion a year
- Adaptation 100 to > 450 billion

- Range 600 to >1,550 billion a year

Importance of Better Information

- Advantage of greater understanding among parties of the scale of estimates and assumptions behind them
- Importance of expanding support for bottom-up approaches, such as the NEEDS study (UNFCCC 2010)

Methodology

- Greater precision with more detailed, sectoral studies but how to add up
- Many implicit, hard-to-measure, costs are ignored in overall estimates
  - Skills upgrading, local implementation capacity, etc.
  - Costs of adapting technology to local conditions
- Uncertainty in estimates of proportion of investment subject to climate change
- Many estimates are not independent of each other, partake of flaws in other studies

Thank you