Equity and cost-effectiveness of multilateral adaptation finance – are they friends or foes?

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Overview

- **Journal paper** 'Equity and cost-effectiveness of multilateral adaptation finance –are they friends or foes?'
  - Forthcoming in *International Environmental Agreements*
  - Not a CPI study, written during time at University of Zurich
  - Co-authors
    - Åsa Persson, Stockholm Environment Institute
    - Izabela Ratajczak-Juszko, RMIT University, Melbourne
    - Axel Michaelowa, University of Zurich

- **Empirical illustration:** Climate Policy Initiative (CPI) case study on adaptation finance in the **agricultural sector in Nepal**

Journal paper on Multilateral Adaptation Finance

Research question and strategy

- **Question: how to allocate multilateral adaptation finance?**
  - Goal 1: Equity, or fairness
  - Goal 2: Cost-effectiveness, or economic efficiency
  - Literature gap: trade-offs between equity and cost-effectiveness?

- **Research strategy**
  - Theoretical discussion, potential indicators
  - Empirical correlation analyses, studying all 39 project documents with Adaptation Fund Board decisions in 2011
    - Both full projects and project concepts
    - Projects in Cook Islands, Ecuador, Madagascar, Mauritania, Sri Lanka, Uruguay...
    - Project sector: agriculture, coasts, ecosystems, water

Equity

- **What is equity?**
  - Positive approach: 'Distribution of resources perceived as fair by both relational partners' (Adams 1965)
  - Normative principles (Duus-Otterstrom and Stripple, 2011)
    - Equality: equal funding or making everyone equally vulnerable
    - Leximin: help the worst-off first
    - Utilitarianism: maximation of utility

- **How to operationalize equity?**
  - Indicators in this paper *(our choice, no agreement in the literature)*
    - Equality -> 1) equal funding per capita -> number of beneficiaries
    - Leximin -> 2) supporting most vulnerable countries (vulnerability indices)
      -> 3) helping the poorest countries (GDP data, 2011)
    - Utilitarianism -> not operationalized, hardly in line with adaptation funding principles under UNFCCC, such as supporting the most vulnerable countries, and balanced / equitable access.

Cost-effectiveness

- **What is cost-effectiveness?**
  - Cost-effectiveness: achieving a desired effect at least cost
  - Costs = economic costs of adaptation finance
  - Desired effect
    - Economic benefits, absolute (-> cost-effectiveness = economic efficiency)
    - Economic benefits, relative to existing income level
    - Human live savings (monetization of lives ethically challenging, Fearnside 1998)
    - Safeguard of the environment
    - Other potential effects

- **How to operationalize cost-effectiveness?**
  - Indicators in this paper *(our choice, no agreement in the literature)*
    - Economic benefits, absolute -> 1) Income in $ per year / $ of project costs
    - Economic benefits, relative -> 2) Yearly incomes saved / $ of project costs
    - Human live savings -> 3) Disability-adjusted Life Years saved / $ of project costs

Equity and cost-effectiveness – friends or foes?

- **Theoretical discussion**
  - Synergy likely: in case of relative economic or human live benefits
  - Trade-off likely: in case of absolute economic benefits
    - poorer & more vulnerable countries less likely to save economic assets
    - (synergy if absolute economic savings seen as indicator for maximized utility, and maximizing utility as normative equity principle)

Equity and cost-effectiveness – friends or foes?

- Empirical examination
  - Synergy and trade-offs as expected
    - Except 'human live savings' but weak empirical basis
  - Does not depend on vulnerability indicator used or stage of project

Table 7 Spearman's product moment correlation coefficients between equity and cost-effectiveness criteria (all proposals)

Both project concepts and full proposals ($N = 35$)	Cost-effectiveness		
	Absolute economic savings in USD	Relative economic savings (incomes saved)	Human live savings (DALYs)
Equity			
Equal funding per capita	−0.07	0.82***	0.14
Most vulnerable countries (Barr et al. 2010)	−0.04	0.54***	0.00
Poorest countries (low GDP per capita)	−0.13	0.66***	−0.17

*** Significant at 0.01 level

Empirical illustration: CPI case study in Nepal

Who is Climate Policy Initiative (CPI)?

- Climate Policy Initiative (CPI) is a team of analysts and advisors that works to improve the **most important energy and land use policies** around the world, with a **particular focus on finance**.

- We answer pressing questions posed by decision makers through **in-depth analysis on what works and what does not.**

- CPI just published Global Landscape of Climate Finance 2013;
  - USD 359 billion of climate finance in 2012, below 2011 and needs
  - USD 20-24 billion of adaptation finance
  - Climate finance dominated by domestic flows (76%) but adaptation finance at least 65% international.

CPI case study on PPCR* project in Nepal

Maize processor, sugar & rice mill → Training on adaptation → Vulnerable farmers

- **'Equity'-related findings**
  - Nepal: Least Developed Country, very vulnerable to CC
  - Rice, maize & sugarcane farmers: among most vulnerable, as projected yield by 2050: 3-21%↘ in target districts
- **Cost-effectiveness**
  - Approach successful in similar contexts (e.g. sugarcane India)
  - Sustainability expected due to own interests of agribusinesses
- **Cost-effectiveness and equity as friends in this case**

* PPCR = Pilot Programme for Climate Resilience, adaptation window of Climate Investment Funds

Key messages

- In case of multilateral adaptation finance, equity and cost-effectiveness are:
  - friends if *relative* economic benefits is the effectiveness indicator
  - foes if *absolute* economic benefits is the effectiveness indicator (except if maximizing economic utility as equity principle)

- Nepal case study illustrates potential synergies of equity and cost-effectiveness
  - Approach to use agri-business companies for training farmers on climate resilience is cost-effective and helps the most vulnerable

Thank you!

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