Delineating the Policy Space for Loss and Damage

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Overview

1. Climate Change challenges
2. Policy responses
3. L&D discourse
4. A proposal
5. Conclusio
WIDESPREAD OBSERVED IMPACTS
A CHANGING WORLD
Confidence in attribution to climate change

Very low  low  med  high  very high

indicates confidence range

Observed impacts attributed to climate change for

Physical systems

- Glaciers, snow, ice, and/or permafrost
- Rivers, lakes, floods, and/or drought
- Coastal erosion and/or sea level effects

Biological systems

- Terrestrial ecosystems
- Wildfire
- Marine ecosystems

Human and managed systems

- Food production
- Livelihoods, health, and/or economics

Regional-scale impacts

Outlined symbols = Minor contribution of climate change
Filled symbols = Major contribution of climate change
Adaptation is already occurring
RISKS OF CLIMATE CHANGE INCREASE WITH CONTINUED HIGH EMISSIONS
The 5 Reasons for Concern/burning embers diagram

UNFCCC (1992)

Art. 2: “[…] prevent dangerous anthropogenic interference with the climate system.”
Art. 3: “[…] specific needs and special circumstances […] especially those that are particularly vulnerable to the adverse effects of climate change [...].”
2014 version

Assessment Box SPM.1 Figure 1.

Global mean temperature change

(°C relative to 1850–1900, as an approximation of preindustrial levels)

2 degrees! COP16
1.5 degrees! COP21
Current warming

IPCC, 2014
Message 5: The 2°C limit should be seen as a defence line. The ‘guardrail’ concept, in which up to 2 °C of warming is considered safe, is inadequate and would therefore be better seen as an upper limit, a defence line that needs to be stringently defended, while less warming would be preferable.
PLAN A
EFFECTIVE CLIMATE CHANGE MITIGATION AND CLIMATE RISK MANAGEMENT
A MORE VIBRANT WORLD
Got a climate problem? Try stratospheric sulfate aerosols for that quick climate fix!

PLAN B
GEOENGINEERING

WARNING! Side effects may include: water cycle alteration, drought, ozone loss, upper atmospheric warming, ecosystem alterations and delays to greenhouse gas emission reduction negotiations.

Please consult a lawyer before taking.

PLAN C
LEAVING IT ALL BEHIND
Policy response to the challenge (Plan A - Mitigation and Adaptation)
Paris COP 21
But: State of play before & after COP 21

Climate Action Tracker, October 2015
Responsibility and justice?
Dangerous climate change-related risks affecting vulnerable populations and systems
Policy response for risks beyond adaptation
The Loss & Damage Mechanism

- **AOSIS** in 1991 proposed establishment of a compensation scheme for the most vulnerable small island and low-lying coastal states
- **Warsaw Loss and Damage mechanism institutionalised** in 2013
- L&D with **stand-alone article in Paris agreement 2015**
- **3rd pillar of deliberations** under the UNFCCC in addition to mitigation and adaptation
- **Contested terrain**
  - ‘Southern countries’ at risk (such as AOSIS) demand **compensation**, reject risk management as involves national responsibility
  - OECD negotiators willing to support **risk management**, part. **insurance**, but liability and compensation considered red lines
Perspectives on Loss and Damage

L&D is a debate about how to address harm done to vulnerable countries: “Existential”

L&D refers to climate-related impacts beyond the limits of adaptation: “Limits to Adaptation”

L&D is an additional mechanism to address risk from climate change, alongside adaptation, disaster risk reduction and humanitarian work: “Risk Management”

All climate change impacts are potential L&D, and these can be dealt with through mitigation and adaptation: “Adaptation and Mitigation”

Boyd, James and Jones, 2016
L&D Executive Committee
Action areas of 2 year work plan

AA1 | Particularly vulnerable developing countries, populations, ecosystems

AA2 | Comprehensive risk management approaches

AA3 | Slow onset events

AA4 | Non-economic losses

AA5 | Resilience, recovery & rehabilitation

AA6 | Migration, displacement & human mobility

AA7 | Financial instruments & tools

AA8 | Complement, draw upon the work of and involve other bodies

AA9 | Development of a 5-year rolling work plan

UNFCCC, 2016
Questions

Dealing with unavoids risks today AND avoiding future risks and preventing unavoidable risks?

How different –or the same- as adaptation and disaster risk management?

What is the risk and options space?
Methodological approach for identifying the Loss and Damage space

• Principled approach to the L&D debate
  o Integrate evidence from attribution studies and work towards **compensatory justice** → curative options
  o Supporting climate risk management via **distributional justice** → transformational options
  o Signaling urgency of 1.5°C/2°C C ambition

• Building blocks for policy proposal on Loss&Damage
  1. Comprehensive risk analytics
  2. Risk evaluation: risk preference and tolerance
  3. Justice principles

Mechler&Schinko, 2016
A broad climate risk analytical perspective

Temporal context
- Forward looking
- Backward looking

Notion of justice
- Distributive justice
- Compensatory justice

Political principles
- Capacity & needs
- Liability & rights

Policy & Implementation

Needs & liability-based Climate Risk Management

Implementation horizon
- Short to medium term
- Medium to long term

Schinko, Mechler, Hochrainer-Stigler, forthcoming
1. Climate change and disaster risk

Hazard
Intensities, duration and frequencies of some hazards changing (IPCC 2012&14)
Extreme event attribution in early stages (James et al., 2014; Trenberth et al., 2015)

Exposure
Dominating factor - currently (IPCC, 2012&14)

Vulnerability
Key driver, knowledge gaps, significant adaptation deficit (IPCC, 2012)

Risk
Climate attribution very complex (Schaller et al., 2016)
Future risk: IPCC Working II regional climate risk analysis

IPCC, 2014
2. Risk evaluation

Acceptable, tolerable and intolerable risks
Dow et al. 2013b after Klinke and Renn 2002; Renn and Klinke 2013)
3. Climate Justice

- Identifying roles and responsibilities for dealing with risks involves attention to climate justice principles

- **Compensatory justice**
  - Polluter-pays principle,
  - due to the unequal distribution of historical and current emissions, as well as potential irreversible loss,
  - attributing impacts to anthropogenic climate change and identifying harm-doing.

- **Distributive justice**
  - Burden sharing necessary as many vulnerable countries in need of international support for tackling today's adaptation deficits
  - Does not require climate attribution of past, present and future risks for generating international support, such as provided via the Global Facility for Disaster Risk Reduction (GFDRR).
What are the risks we are talking about and what set of measures can be used?

<table>
<thead>
<tr>
<th>Avoided</th>
<th>Unavoided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoidable damage avoided</td>
<td>Avoidable damage and loss not avoided</td>
</tr>
<tr>
<td>Damage prevented through mitigation and/or adaptation measures.</td>
<td>Where the avoidance of further damage was possible through adequate mitigation and/or adaptation, but where adaptation measures were not implemented due to financial or technical constraints.</td>
</tr>
<tr>
<td>Unavoidable damage and loss</td>
<td>Damage that could not be avoided through mitigation and/or adaptation measures; e.g., coral bleaching, sea level rise, damage due to extreme events where no adaptation efforts would have helped prevent the physical damage.</td>
</tr>
</tbody>
</table>

**Transformative measures**
Avoiding risks *ex-ante* through transformative risk management (building on DRR and CCCA)

**Curative measures**
Dealing with unavoidable and unavoidable impacts *ex-post*

Source: Verheyen, 2008

Mechler and Schinko, 2016
Curative options

- Support increasing costs attributable to climate change (e.g., coastal defense)
- National-level L&D mechanisms/pools being set-up: Bangladesh, Philippines etc.
- Many risks non-monetary
- Displacement coordination facility:
  - Legal protection by international law and finance for forced migration
  - Nansen Initiative: state-led effort for tackling disaster-induced cross-border displacement
Transformative measures for risk management

- Comprehensive risk management part of the ExCom workplan
- Debate largely on insurance
  - Pooling and sharing risks to diversify risks integrated with a broader view towards comprehensive DRM and building resilience
  - Innovative instruments involving Public Private Partnerships
- Livelihood transformation (+up-side risk taking, e.g. R4 in Eastern Africa)
- Migration
- Building resilience throughout while aligning with SDGs
Linking up-and down-side risk management
Example R4 Rural Resilience Initiative (drought)

- Ethiopia, Senegal, Malawi, Zambia
- Partners: farmers, local relief society, insurers, reinsurers, rural bank., university, government and donors
- Smallholder farmers’ livelihoods in drought-prone northern state of Tigray in Ethiopia exposed to weather shocks

Integrated risk management framework
- Improved resource management (risk reduction)
- Individual/group savings (risk reserves)
- Microinsurance (risk transfer)
- Microcredit (risk taking)

- “Insurance-for-work” program on top of the government’s “food and cash-for-work” Productive Safety Net Programme (PSNP)

- Work program includes projects for reducing risk and building climate resilience, such as improved irrigation or soil management.
Risk and Policy space for the Small Island States

Identifying the policy space for climate loss and damage

The authors of this policy forum believe climate risk analysis must play a fundamental role

Springer Medizin
Small Islands
Small Islands: sea level rise and high-water events

### Climate-related drivers of impacts

<table>
<thead>
<tr>
<th>Warming trend</th>
<th>Extreme temperature</th>
<th>Drying trend</th>
<th>Extreme precipitation</th>
<th>Precipitation</th>
<th>Snow cover</th>
<th>Damaging cyclone</th>
<th>Sea level</th>
<th>Ocean acidification</th>
<th>Carbon dioxide fertilization</th>
</tr>
</thead>
</table>

The interaction of rising global mean sea level in the 21st century with high-water-level events will threaten low-lying coastal areas (high confidence).

- High ratio of coastal area to land mass will make adaptation a significant financial and resource challenge for islands.
- Adaptation options include maintenance and restoration of coastal landforms and ecosystems, improved management of soils and freshwater resources, and appropriate building codes and settlement patterns.

### Level of risk & potential for adaptation

<table>
<thead>
<tr>
<th>Present</th>
<th>Near term (2030–2040)</th>
<th>Long term (2080–2100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
</tbody>
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IPCC, 2014
Risk space

- **Very high**
- **Intolerable**
- **Tolerable**
- **Acceptable**

Options space

- **TLD**: Voluntary resettlement, alternative livelihoods
- **CLD**: Involuntary migration and displacement
- **CCA**: Maintenance and restoration of coastal landforms and marine and terrestrial ecosystems, improved management of soils and freshwater resources, appropriate building codes and settlement patterns
- **DRR**: Seawalls, early warning, insurance
- **CLD**: Absorbing increasing costs of DRR & CCA with rising risk

**BRR**: no further measures beyond those already implemented

**Legend**

- **Transformative Loss & Damage (TLD)**
- **Curative Loss & Damage (CLD)**
- **Climate Change Adaptation (CCA) & Disaster Risk Reduction (DRR)**
- **Baseline Residual Risk (BRR)**

Mechler & Schinko, 2016
Risk space

Very high

Intolerable

Tolerable

Acceptable

Very low

Options space

TLD: Voluntary resettlement, alternative livelihoods

CLD: Involuntary migration and displacement

CCA: Maintenance and restoration of coastal landforms and marine and terrestrial ecosystems, improved management of soils and freshwater resources, appropriate building codes and settlement patterns

DRR: Seawalls, early warning, insurance

CLD: Absorbing increasing costs of DRR & CCA with rising risk

BRR: no further measures beyond those already implemented

Transformative Loss & Damage (TLD)

Curative Loss & Damage (CLD)

Climate Change Adaptation (CCA) & Disaster Risk Reduction (DRR)

Baseline Residual Risk (BRR)

Implemented

Feasible

Residual risk

Further potential for risk management

Mechler & Schinko, 2016
Cost for supporting curative and transformative measures?

- **TLD**: Voluntary resettlement, alternative livelihoods
- **CLD**: Involuntary migration and displacement
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**Legend:**
- **Transformative Loss & Damage (TLD)**
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**Risk space**
- Very high
- Intolerable
- Tolerable
- Acceptable
- Very low

**Options space**
- **Present** (2030-40)
- **Near term** (2030-40)
- **2°C**
- **Longer term** (2030-2100)
- **4°C**

Mechler & Schinko, 2016
Modelling risk and risk management
CATSIM model

Mechler, Hochrainer, Linhrooth-Bayer, Pflug, 2006
Projecting climate risk (Bangladesh)

Mechler and Bouwer, 2015
Projecting climate risk (Bangladesh)
Projecting climate risk (Bangladesh)

Mechler and Bouwer, 2015
Modelling risk and risk CATSIM model

Mechler, Hochrainer, Linnerooth-Bayer, Pflug, 2006
Risk evaluation: risk layering

Mechler et al., 2014
Risk evaluation: risk layering

- **Low frequency / high impact**
  - Compensation beyond the limits of adaptation
  - Very-high-risk layer
  - Absorbing risk

- **Return period**
  - Financial risk threshold

- **High frequency / low impact**
  - Risk reduction is frequently the most cost-efficient response
  - Risk financing may be the most appropriate response if risk reduction is not cost-efficient
  - Medium-risk layer
  - Supporting risk management
  - Low-risk layer

Mechler et al., 2014
Future risks and liabilities (Bangladesh)

Risk layers with climate change (B1 scenario and no additional risk reduction)

Based on Mechler and Bouwer, 2015
Implications

Regional and national pools/national mechanisms

- Curative: Increased capitalisation in a changing climate
- Transformative: Linking risk pools to resilience building

→ Eastern Africa-drought risk management: risk reduction, insurance, credit, risk taking
Broader implications: distributive justice perspective

Germanwatch, 2017

IPCC, 2014

The Mountain Institute, 2017
Epilogue: from symbolic to real action?

• Need to stick to Plan A+
  – L&D as link to SDG debate: Transformative risk management
  – L&D as “Canary in the coal mine:” curative component

• Need for pluralistic methodological approach to address economic and non-economic risks

• Enhanced imperative to work with civil society and practice community - in addition to policy level
Climate Risk Management, Policy and Governance

Series Editors: Mechler, Reinhard, Surminski, Swenja
ISSN: 2510-1390

Fall 2017 Book #2: Mechler, Bouwer, Linnerooth-Bayer, Schinko, Surminski
"Loss and Damage from Climate Change. Concepts, Principles and Policy Options.”
Springer
Loss and Damage research network

Members’ institutional affiliations

- Practical Action
- University of Oxford
- University of Helsinki
- Grantham Research Institute on Climate Change and the Environment
- Basque Centre for Climate Change
- Victoria University of Wellington
- VU University Amsterdam
- University of Reading
- Climate Analytics
- Universität Salzburg
- Universität Zürich
- Germanwatch
- IIASA
- UNU-EHS Institute for Environment and Human Security
- United Nations University
- ICCCAD
- International Centre for Climate Change and Development
- Fondazione Eni Enrico Mattei
- Deltares
Thank you for your attention!
Roles for socio-economic analysis in climate risk discourse
Research questions

Epistemological
• What are risks and what constitutes ‘danger’ from an economic/social science perspective?

Reflective
• How to collectively decide and act on appropriate levels of protection?

Instrumental
• Funding necessary to support adaptation and ‘beyond adaptation’?
• Requisite institutions for governing critical risks?

Participatory
• How to co-generate acceptable and effective processes & options for implementation?
Discourses for the broader risk spectrum

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<thead>
<tr>
<th>Probabilities</th>
<th>Known</th>
<th>Unknown</th>
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<tbody>
<tr>
<td>Known</td>
<td>Risk</td>
<td>Ambiguity</td>
</tr>
<tr>
<td></td>
<td>Instrumental</td>
<td>Participatory</td>
</tr>
<tr>
<td>Unknown</td>
<td>Uncertainty</td>
<td>Ignorance</td>
</tr>
<tr>
<td></td>
<td>Reflective</td>
<td>Epistemological</td>
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Based on Schinko, Mechler, Hochrainer-Stigler, *Mitigation and Adaptation Strategies for Global Change* 2016