International Center for Climate Governance

ICCG Webinar Series on Disaster Risk Reduction

The Triple Dividend of Resilience – A New Business Case for Disaster Risk Management

Swenja Surminski – Grantham Research Institute on Climate Change and the Environment

February 8th, 2017

Outline

- Why resilience matters
- The Triple Resilience Dividend concept, with:

WORLD BANK GROUP ODI GFDRR Global Facility for Disaster Reduction and Recovery

- Delivering resilience – insurance as a key driver?

Unless you see this as an 'Act of God'…

Risk = exposure + vulnerability + hazard

Photo sources: various, see author for details

Grantham Research Institute on Climate Change and the Environment

Centre for Climate Change Economics and Policy

Resilience means different things to different people…

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Disaster Risk Management

Climate Adaptation

Sustainable Development

Storyline

- Disaster risks are rising - losses are disproportionate in poorer countries.
- Some DRM success is visible – particularly for saving lives.
- But are we keeping up with rising risk trends?
- Future risk will be determined by demographic change, socio-economic developments: Where and how we build/live/work will determine future risk levels.
- Climate change is adding to the hazard burden.
- 2015 brought together international efforts on disaster risk management (Sendai Framework), poverty reduction and sustainable development (SDG), and climate change (Paris Agreement).

But…

We spend far more on disaster response and recovery than on preparedness.

A significant DRM investment gap persists, with expenditures on prevention almost always lower than those on disaster response: on average $7 spent on relief versus $1 spent on risk reduction.

(Kellett, J. and Caravani, A. (2014) Financing Disaster Risk Reduction: A 20 year story of international aid. London: Overseas Development Institute)

And we keep on adding to the problem through lack of planning and building in harms way.

Progress in Debate and Practice?

pre1990s → *2015* → *Post HFA SDG debate*

Objectives	Disasters as acts of God →	Understanding fiscal risk →	Protecting public finance →	Comprehensive disaster risk management →	Synergistic resilience and development strategy → Disaster risk integrated with development risk and opportunity
Tools		Loss databases, Catastrophe risk modelling, fiscal risk and hedge matrix	Fiscal gap concept, economic appraisal	Risk layering, modelling risk dynamics and synergies	Fiscal stress testing, multi risk matrix and multi-metric evaluation
Perspective on benefits		Understanding risk and risk avoided	Direct benefits of DRM	Indirect and comprehensive benefits from DRM	Co-benefits (incl. in the absence of disasters)

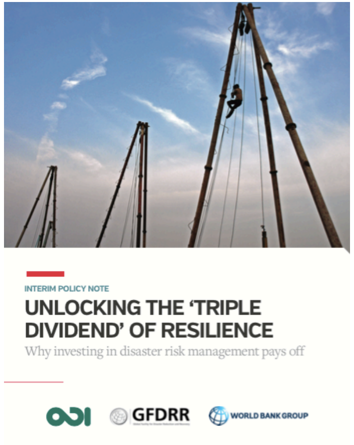
Source: Reinhard Mechler, Junko Mochizuki and Stefan Hochrainer-Stigler: Disaster Risk Management and Fiscal Policy: Entry points for finance ministries, in Surminski and Tanner (eds): Realising the Triple Dividend of Resilience, Springer, 2016

Strengthening the case for investing in resilience:

- <u>The starting point</u>:
Incomplete cost-benefit analyses result in Insufficient investments in DRM.

- <u>The aim</u>:
Change the way in which investments in DRM are decided and evaluated.

- <u>Message to Ministry of Finance officials:</u>
To invest in DRM and resilience is to secure growth and development.


INTERIM POLICY NOTE
UNLOCKING THE 'TRIPLE DIVIDEND' OF RESILIENCE
Why investing in disaster risk management pays off
ODI GFDRR WORLD BANK GROUP

Investing in resilience reduces losses and damages in the case of a disaster. However, it can also yield development benefits regardless of disasters. Typically, standard disaster risk management investment appraisals fail to account for the 2nd and 3rd dividends of resilience.

Disaster risk management (DRM) investments

1st Dividend of Resilience: Avoided losses
Avoiding damages and losses from disasters, by:
- Saving lives and reducing people affected
- Reducing damages to infrastructure and other assets
- Reducing losses to economic flows

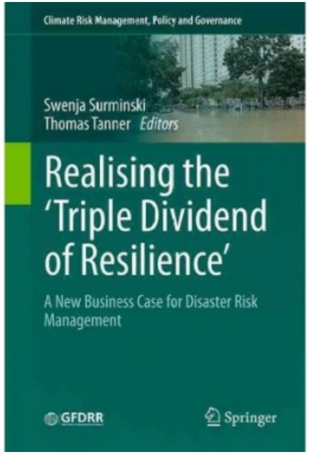
Benefits when disaster strikes

2nd Dividend of Resilience: Unlocking Economic Potential
Stimulating economic activity due to reduced disaster risk, by increasing:
- Business and capital investment
- Household and agricultural productivity
- Land value from protective infrastructure
- Fiscal stability and access to credit

3rd Dividend of Resilience: Generating Development Co-Benefits
DRM investments can serve multiple uses which can be captured as co-benefits such as:
- Eco-system services
- Transportation uses
- Agricultural productivity gains

Benefits Regardless of disasters

Costs and potential adverse effects of DRM measures



Avoided losses (1st Dividend of Resilience):

➢ The immediate and long-run losses and damages that disaster risk reduction measures can prevent in the event of a disaster.

Saving lives and avoiding losses (First Dividend of Resilience)

DRM measures can avoid or reduce losses and damages (both immediate and long-run) in the event of a disaster.

These include:

- saving lives and reducing numbers of people affected
- reducing direct damages to infrastructure and other assets
- reducing economic and non-monetary losses (direct and indirect).

➢ **tools and methods for empirical analysis:** use probabilistic risk assessment rather than relying only on historic loss figures

Development dividend (2nd Dividend of Resilience):

➢ The development potential that is unlocked when background risk is reduced through DRM measures. This includes innovation, entrepreneurship, and investments, and is independent of the occurrence of any actual disaster.

Unlocking economic potential (Second Dividend)

DRM measures that reduce the background risk due to potential future disasters can have immediate and significant development benefits. Increased resilience enables forward-looking planning, long-term capital investments and entrepreneurship, even if disasters do not occur for a long time.

These benefits include:

- economic gains from positive risk taking (e.g. entrepreneurship and innovation)
- investments in productive assets (e.g. in small-scale agriculture)
- extending planning horizons (e.g. for building up savings)
- increase in land values after DRM investment.

➢ **tools and methods for empirical analysis**: use simple proxies (such as land-value changes, risk thresholds for investment) to measure second dividend and to help understand how reducing background risk can help to unlock and stimulate economic

Co-benefits (3rd Dividend of Resilience):

➢ Co-benefits of disaster risk management are any benefits that accrue in addition to the primary DRM objectives of avoiding losses and boosting development. Co-benefits can include economic, social and environmental aspects, and be non- DRM specific.

Generating development co-benefits (Third Dividend of Resilience)

DRM investments have multiple uses and can be classified as economic, social and environmental co-benefits. These co-benefits may either be explicitly designed into the investment (such as dual-use infrastructure) or incidental.

While the nature of co-benefits varies significantly, they all materialise even in the absence of a disaster. Co-benefits can play an important role in motivating DRM measures and determining their design. Multi-purpose design that intentionally integrates these co-benefits can save money and significantly improve the attractiveness of investing in DRM.

These co-benefits include:

- economic co-benefits, (e.g. flood protection supporting fisheries)
- social co-benefits, (e.g. improved transparency or social cohesion)
- environmental co-benefits (e.g. watershed protection).

➢ **tools and methods for empirical analysis:** apply methodologies common in other areas for assessing co-benefits (eg climate mitigation); methodologies for assessment of nonmarket values.

Recommendations for decision-makers

Integrating the Triple Dividend of Resilience in DRM appraisals:

- Define the problem and its context: mapping exercise to understand development goals, threats and risk drivers.

- Identify and apply tools and methods for empirical analysis of DRM.

- Communicate
  - the benefits of DRM actions using triple dividend principles and the value of DRM interventions relative to 'do nothing' scenarios.
  - how DRM interventions are linked, or can be delivered through, other development interventions;
  - the implications of fear and risk-aversion and identify risk thresholds and acceptable levels of risk for different stakeholders.

Chapter 1:
The Triple Dividend of Resilience – a new narrative for disaster risk management and development
Thomas Tanner, Swenja Surminski, Emily Wilkinson, Robert Reid, Jun Rentschler, Sumati Rajput and Emma Lovell

Chapter 2:
Unlocking Economic Potential: The 'Development dividend' of resilience
Stephane Hallegatte, Mook Bangalore and Marie-Agnes Jouanjean

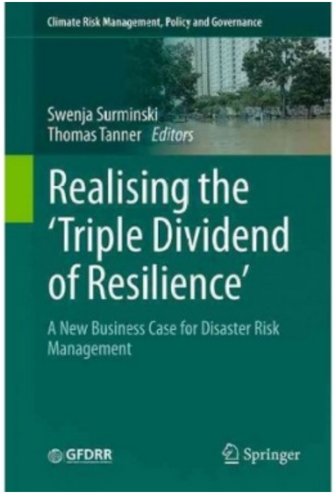
Chapter 3:
Co-benefits of disaster risk management: The third dividend of resilience
Francis Vorhies and Emily Wilkinson

Chapter 4:
Disaster Risk Management and Fiscal Policy: Entry points for finance ministries
Reinhard Mechler, Junko Mochizuki and Stefan Hochrainer-Stigler

Chapter 5:
Capturing the Co-Benefits of Disaster Risk Management in the Private Sector
Adam Rose

Chapter 6:
Investing in Disaster Risk Management in an Uncertain Climate
Thomas McDermott

Chapter 7:
Financial Crises and Economic Resilience: Lessons for Disaster Risk Management and Resilience Dividends
Stephany Griffith-Jones and Thomas Tanner



Grantham Research Institute on Climate Change and the Environment

Centre for Climate Change Economics and Policy

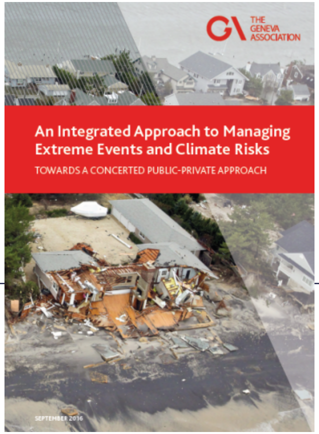
What about insurance and resilience?

Insurance can play a significant role in our ability to recover from disasters through its risk transfer role:

- Spreading and smoothing of risks
- Faster and more efficient recovery
- Certainty about post-disaster support
- Reducing immediate welfare losses and consumption reduction
- Reducing need for budgetary changes

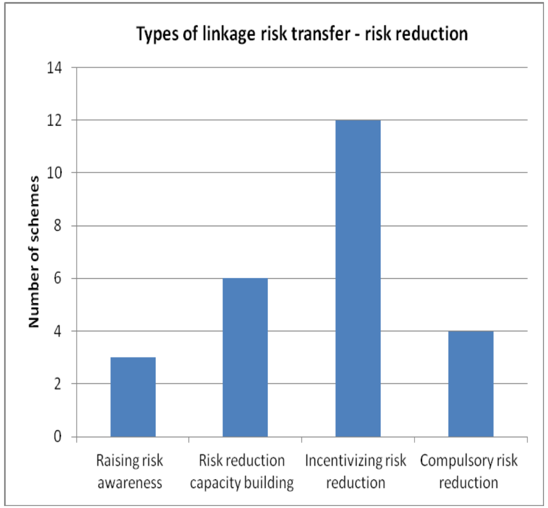
See Hallegatte, S. (2012a) Perspective Paper Natural Disasters. Copenhagen Consensus: Copenhagen. Available at: http://www.copenhagenconsensus.com/sites/default/files/Natural%2BDisasters_Perspective%2Bpaper%2B1.pdf

Can insurance also help us build the case for risk reduction?

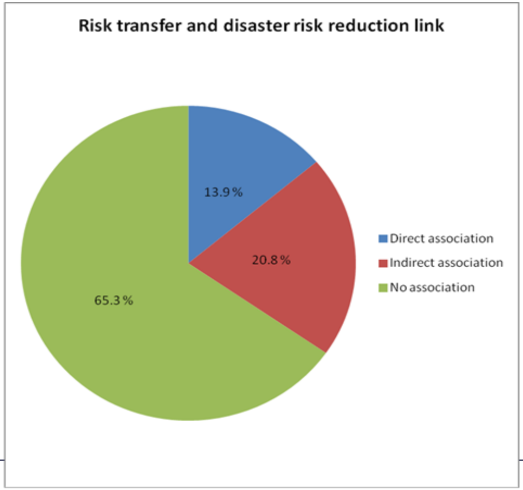


Insurance can help to reduce disaster risk

- Incentives for resilience through terms and conditions for insurance policies
- Awareness-raising through information campaigns
- Price signals by moving to risk-based prices for insurance
- Sharing of risk data and risk expertise
- Lobbying for public policy/building standards/regulation
- Investment in resilience (infrastructure or flood defence
- and other protection measures)

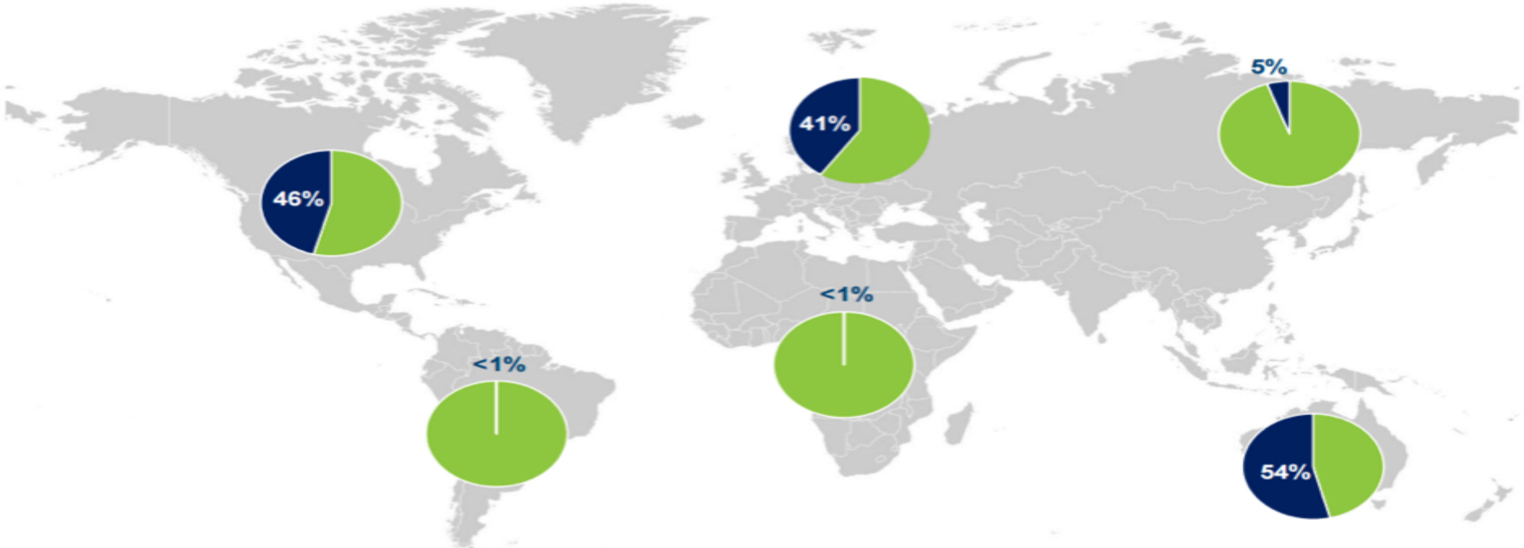


- **But:**



Source: Surminski and Oramas-Dorta (2014) Flood insurance schemes and climate adaptation in developing countries. International Journal of Disaster Risk Reduction

Protection gap – or resilience gap?



Source: Munich Re, NatCatSERVICE, 2014

Overall losses

Insured losses – percentage share of overall losses

Continent	Overall losses US$ m
N. America	37,500
S. America	1,300
Europe	22,500
Africa	210
Asia	60,000
Australia/ Oceania	3,500

Recent initiatives supporting climate risk insurance

G7 Climate Risk Insurance Initiative	Global – developing countries	direct (such as microinsurance) and indirect extreme weather insurance (such as sovereign risk transfer)	5-year project funded by the G7 members to cover an additional 400 million people in developing countries.
Pacific Capacity Risk Insurance Pool (PCRIP)	5 Pacific island nations	parametric disaster insurance for tropical cyclones and earthquakes	The pool is part of the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI), a joint initiative of the World Bank, the Secretariat of the Pacific Community (SPC/SOPAC) and the Asian Development Bank
R4 Rural Resilience Initiative	Senegal, Ethiopia	Agricultural insurance	WFP scheme. Enables farmers to pay for crop insurance with their own labour
Modified national agricultural scheme (mNAIS)	India	Agricultural insurance	Explicitly addresses adaptation to weather risks Very large scheme in terms of penetration
African Risk Capacity (ARC)	5 African states	Sovereign disaster risk insurance	Risk pool akin to the CCRIF
RIICE	South East Asia	Remote sensing and modelling	RIICE is a program to accurately model rice yields using satellite data. It is not moving onto using this for insurance products
EuropaRe	South-Eastern European states	Property insurance & Agricultural insurance	World Bank project. EuropaRe designs products and reinsurers them. Sovereign states (Albania etc.) have to become members of program.
Agricultural and Climate Risk Enterprise (ACRE)	Kenya, Rwanda, Tanzania	Agricultural insurance	Agricultural index insurance scheme funded by GIIF

Risk transfer, risk management and investment

The benefits of resilience to insurers

Investing in resilience can provide the following general benefits to insurers (and other investors):

- Reduces their exposure to climate risks;
- Helps to further diversify their investment portfolios;
- Helps manage the transition risks of moving to a low carbon economy (as resilient assets are less likely to be impaired);
- Supports brand and reputation, thereby reducing the risk of hostile investor activism;
- Strengthens the corporate social responsibility argument by supporting the image of a future-oriented and socially engaged company;
- Investing in projects that increase resilience can help to protect or enhance the value of other, related assets, in the same way that investing in infrastructure improvements (like London's CrossRail project) may benefit the owners of neighbouring land or property;
- Fostering a culture of resilience encourages healthier economies, thereby benefitting the overall business environment and supporting growth; and
- Communicating the value of resilience encourages other stakeholders to embrace it, thereby contributing to a mutually supportive societal trend.

It can also provide benefits that are specific to insurers:

- Helps to avoid unintended concentrations of risk, by minimising exposure to assets subject to the same risks as their underwriting liabilities;
- Reduces the threat posed by the general perception from outside the industry that insurers are natural investors in resilience, yet fail to deliver; and
- Fostering a culture of resilience helps to prevent risks from becoming too severe to insure, which would weaken premium income and exacerbate the protection gap.

Source: Investing for Resilience, ClimateWise 2016

Grantham Research Institute on Climate Change and the Environment

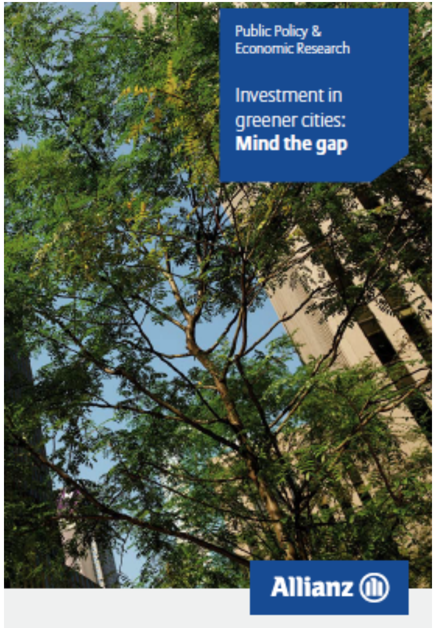
Centre for Climate Change Economics and Policy

Resilient infrastructure - a significant opportunity

Table 2: Infrastructure investment needs

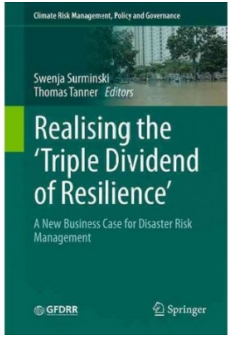
How much?	For what?	When?	Source
Over USD 40 trillion	Global infrastructure investment most of which will be spent on urban infra-structure development and maintenance	2012 - 2037	KPMG (2012)
Around USD 41 trillion	Amount that cities worldwide will need to invest in expanding their water, power and transportation systems	2005 - 2030	Booz&Company (2007), quoted in Siemens (2010a)
Around USD 50 trillion	Global infrastructure requirements	2007 - 2030	OECD 2006/07 estimates, quoted in OECD (2013c)
USD 57 trillion	Global infrastructure investment needed (even without green targets and development goals)	2013 - 2030	McKinsey (2013)

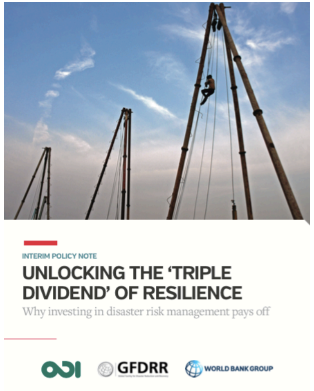
Source: 'Mind the Gap, Allianz 2015



For any questions:

s.surminski@lse.ac.uk





WORLD BANK GROUP

GFDRR
Global Facility for Disaster Reduction and Recovery

Grantham Research Institute on Climate Change and the Environment

Centre for Climate Change Economics and Policy

Q&A

If you have any questions, please write us on the GoToWebinar chat.

For time management reasons, we don't assure that all questions will be answered.

Follow our next webinar on «Disaster Risk Reduction»!

All details will be published on the ICCG website: **www.iccgov.org**

International Center for Climate Governance