

How insurance can support climate resilience

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Insurance is gaining importance in and beyond the climate negotiations and offers many opportunities to improve climate risk management in developing countries. However, some caution is needed, if current momentum is to lead to genuine progress in making the most vulnerable more resilient to climate change.

Was 2015 ‘the year of climate insurance’? Statements emerging from the G7 leaders and COP21

in Paris certainly suggest so. Article 8 of the Paris Agreement includes “Risk insurance facilities, climate risk pooling and other insurance solutions” as areas of action¹.

Earlier in the year, at their summit in Germany, the leaders of the G7 launched a new Initiative on Climate Risk Insurance (InsurResilience), pledging to bring climate insurance to 400 million currently uninsured individuals in poor countries by 2020. In many ways the G7 initiative and the Paris Agreement are the culmination of a long process to establish insurance as an accepted climate adaptation instrument^{2–4}.

High hopes and expectations ...

The supporters of climate insurance point to increasing losses from weather extremes — such as floods, droughts and tropical cyclones — where the absence of insurance can have negative implications for the scale and duration of the economic impact of disasters, the resilience of businesses, individuals and governments, and speed of recovery⁵. Insurance can shift the mobilization of financial resources away from *ad hoc* post-event payments, where funding is often unpredictable and delayed, towards more strategic and, in many cases, more efficient approaches that were set up in advance of disastrous events⁶. Making these tools available to the most vulnerable seems attractive. A number of regional risk pools such as the African Risk Capacity, the Pacific Catastrophe Risk Assessment and Financing Initiative, and the Caribbean Catastrophe Risk Insurance Facility, as well as new pilot schemes, such as index-based agriculture micro-insurance, are offering financial protection to a growing number

of governments and individuals across the world.

... but some scepticism remains

Any new insurance scheme in developing countries needs to overcome difficult challenges, including lack of risk data, limited financial literacy, and weak financial infrastructure; it also needs high levels of support to make it viable for people with very low income. Many of the new pilots and pools have been designed with this in mind. However, utilizing insurance for adaptation and poverty reduction faces even more challenges: how can a scheme reach the most vulnerable, and how does it cope with and address changing risk levels? As the intensity and frequency of climate extremes increase⁷, is it fair to shift responsibility on to those who are the least responsible for climate change, the least able to shoulder the premiums, and in many cases the least able to reduce their losses?

Without substantial external support, insurance could shift the burden of climate-related impacts to the most vulnerable in society, by requiring them to pay insurance premiums rather than offering them direct help and support. Subsidized premiums are one answer to this; other solutions include publicly funded reinsurance arrangements and technical support — each of which indirectly reduces premiums. For this purpose, discussions on the G7 initiative include the potential of global and regional facilities financed by wealthy countries to absorb a high layer of risk and support local insurance arrangements in the most vulnerable countries, as suggested early on by the Alliance of Small Island States. However, external support, especially direct subsidies, raises the question of

value for money. Some critics point out that traditional insurance is an expensive mechanism with high transaction and capital costs, making premiums far higher than expected losses. This suggests that adaptation funds might be better spent on other types of safety net rather than on buying insurance cover from international insurance markets⁸.

Critics further caution that subsidized insurance can dampen incentives to reduce risks. A recent study for the Climate Investment Fund⁹ suggests that climate insurance can play an important role in climate adaptation. But it also warns that inappropriately set up insurance schemes can have unwanted consequences and may neither benefit the poor nor foster climate resilience. This echoes the IPCC report on managing the risk of extreme events⁷. This report concludes that insurance can be a tool for risk reduction and for recovering livelihoods, particularly in the face of extreme weather events, but it also warns that insurance could provide disincentives for risk reduction, if not correctly structured.

There are no ‘one size fits all’ solutions for climate insurance, and insurance is not suitable for certain risks, such as slow-onset events like sea-level rise. However, this tool does offer many benefits, particularly compared with reliance on post-disaster aid. We therefore believe that there is a role for carefully designed and supported insurance instruments, such as index-based micro-insurance where pay-outs are based on triggering of certain weather parameters like rainfall, and sovereign insurance pools in which national governments are covered against the impacts of natural hazards on their annual budget. But their success will depend on making them fair and

affordable to the poor, and on integrating them into an overarching adaptation and development strategy.

Insurance to improve climate resilience

The limited experience available suggests that climate insurance can enhance resilience¹⁰, but only if it is part of a wider adaptation strategy, rather than being considered in isolation or, worse, as an alternative to adaptation. In other words, if we do not address the underlying issues then risks will become uninsurable because of lack of supply (availability of cover) or demand (affordability of premiums). This is a key lesson emerging from existing insurance schemes in Europe and the USA, where flood insurance especially is already under heavy pressure from rising risk levels due to misguided building and land-use practices, as well as environmental and climatic changes. Recent figures emerging from the UK, highlighted by the Bank of England¹¹, show that climate change and socioeconomic risk drivers are expected to widen the gap between 'affordable' flood insurance premiums and premiums that reflect the technical price of flood insurance. For developing countries in particular, this means that climate insurance should be considered only if it is closely aligned and integrated within an equitable and efficient strategy to address climate risks.

How to make it work?

With the new momentum created by the Paris Agreement, now is a critical time to put together the right mix of measures to facilitate climate-resilient development. The extent to which insurance can feature in this is risk- and country-specific, and dependent on local risk appetite and demand as well as societal values¹². The political commitments coming from G7 and the Paris Agreement have been supported and welcomed by several insurance companies and industry initiatives such as the Munich Climate Insurance Initiative, ClimateWise, and the Geneva Association. Harnessing the potential of insurance for climate-resilient development does require collaboration between public and private actors, but will the current appetite from the private sector be sustainable? This will depend on a range of factors — most importantly on securing the right enabling conditions for insurance and enhancing the underlying climate adaptation efforts.

Before implementing insurance we thus need to better understand its enabling conditions, especially those that could provide benefits beyond risk transfer. One example is our understanding of current and future risks. Data collected

for insurance purposes need to be fed into national assessments and to inform the design of climate adaptation measures. Projections of weather risks, such as those performed in scenario studies at the national or local scale¹³, can provide indications of future impacts as well as the actions required to curb trends in ever-increasing losses and keep risks insurable. An increasing number of investment and development organizations now require risk assessments to include such climate scenarios to allow them to plan more robustly for the future¹⁴. The insurance industry itself, as the world's largest institutional investor, clearly has a role to play here. Ironically, investment decisions by insurers do not usually consider the climate risk knowledge gained on the underwriting side. Far too often infrastructure investment decisions go ahead without any reflection of climate risks. Addressing this would in turn make climate insurance more viable and thus create new markets and opportunities. This has been recognized by some companies, and it is the subject of new initiatives, such as the R!SE Initiative (<http://www.preventionweb.net/rise/>) and the industry's pledge at the UN Climate Summit in New York in 2014 to increase its climate-smart investments.

Furthermore, it is important to consider how to incorporate climate change into the design and operation of insurance. Some new schemes are aimed at temporary changes in weather patterns (for example, forecast insurance and El Niño cover at seasonal timescales), but the vast majority is providing cover for current risks, usually on a year-by-year basis. However, reflecting on future risk trends (not just the climate, but also socioeconomic dynamics) is crucial when designing a scheme to be available beyond the short term. In practice, insurers and governments tend not to incorporate future risk trends or conditions for reducing risks when assessing the viability of new schemes or reforming existing insurance offerings¹⁵. There are a number of innovative approaches addressing this, such as the HARITA pilot in Ethiopia, where farmers 'earn' the subsidized insurance cover through community work aimed at improving overall climate resilience. At sovereign level, the African Risk Capacity scheme is introducing conditions for member countries that create the minimum standards for climate risk management. This looks promising, but it is too early to tell how effective it will be in fostering climate-resilient development. Effective monitoring systems will be needed and should be an integral part of any new scheme being proposed and implemented.

Establishing an insurance scheme does not mean that we can take the climate challenge more lightly. This would be the wrong message. The G7-proposed insurance cover for 400 million uninsured individuals can support climate change resilience for the poor only if the premiums are directly or indirectly subsidized. However, this will only be viable if insurance is linked to adaptation efforts that address the underlying risk factors, otherwise climate insurance will be short-lived and far from cost-effective. Funding climate-resilient infrastructure, establishing data collection and monitoring networks and adjusting agricultural practices — these are all important elements that insurance can complement but not replace. □

References

1. *Adoption of the Paris Agreement* FCCC/CP/2015/L.9/Rev.1 (United Nations Framework Convention on Climate Change, 2015).
2. Dlugolecki, A. F. *et al.* in *Climate Change 1995: Impacts, Adaptation, and Mitigation of Climate Change* (eds Watson, R. T., Zinyowera, M. C. & Moss, R. H.) 539–560 (Cambridge Univ. Press, 1996).
3. Vellinga, P. *et al.* in *Climate Change 2001: Impacts, Adaptation, and Vulnerability* (eds McCarthy, J. J., Canziani, O. F., Leary, N. A., Dokken, D. J. & White, K. S.) 417–450 (Cambridge Univ. Press, 2001).
4. Warner, K. *et al.* *Adaptation to Climate Change: Linking Disaster Reduction and Insurance* (United Nations International Strategy for Disaster Reduction Secretariat, 2009).
5. Hallegatte, S. *Economic Resilience: Definition and Measurement* (World Bank, 2014).
6. Linnerooth-Bayer, J. & Hochrainer-Stigler, S. *Climatic Change* **133**, 85–100 (2015).
7. IPCC *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* (eds Field, C. B. *et al.*) (Cambridge Univ. Press, 2012).
8. Suarez, P. & Linnerooth-Bayer, J. *Insurance-Related Instruments for Disaster Risk Reduction* (International Strategy for Disaster Risk Reduction, 2011).
9. *Building an Evidence Base on the Role of Insurance-Based Mechanisms in Promoting Climate Resilience* (Climate Investment Funds and Vivid Economics, 2016); <http://go.nature.com/2KpLTb>
10. Benson, C., Arnold, M., De la Fuente, A. & Mearns, R. *Financial Innovations for Social and Climate Resilience: Establishing an Evidence Base* (World Bank, 2012).
11. *The Impact of Climate Change on the UK Insurance Sector* (Prudential Regulation Authority and Bank of England, 2015).
12. Mechler, R. *et al.* *Nature Clim. Change* **4**, 235–237 (2014).
13. Bouwer, L. M. *Risk Analysis* **33**, 915–930 (2013).
14. *Towards a Framework for the Governance of Infrastructure* (Organisation for Economic Co-operation and Development, 2015).
15. Surminski, S. *Int. Rev. Environ. Res. Econ.* **7**, 241–278 (2013).