

Climate Risk Insurance: From Policy to Practice



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Climate change is becoming a first order societal priority. Insurance can play a major role in improving the societies' resilience, especially financial resilience, to climate change impacts. Climate Risk Insurance (CRI) has been promoted as a climate policy tool, with major initiatives within the processes of the United Nations Framework Convention on Climate Change (UNFCCC), the G7 and the G20. This article gives an overview of the political mobilization on Climate Risk Insurance and its implementation through public-private and private partnerships. Moreover, expectations towards the public sector and the insurance industry are formulated.

uncertainty by mitigating the financial loss from a specified risk in return for a risk premium. But more generally, engaging in risk assessment and risk pricing can rationalize and incentivize actions towards physical resilience (Jarzabkowski et al., 2019).

The use of insurance or insurance linked instruments has been discussed in the context of climate change adaptation for a long time. Already in the early 1990s, when the United Nations Framework Convention on Climate Change (UNFCCC) was agreed among nation states, insurance or risk transfer was mentioned as an eligible climate adaptation action (United Nations, 1992). Since then, the concept of «Climate Risk Insurance» has received quite some attention and advances have been realized. However, some fundamental challenges remain when using Climate Risk Insurance as a viable climate policy option. For instance, there is no agreed definition of Climate Risk Insurance (see the box «Defining Climate Risk Insurance»). Challenges are especially pertinent in the context of providing benefits to the «most vulnerable» populations, which is often articulated as an ancillary policy objective.

At global and national level, the public policy objective to reduce the protection gap from climatic risks is widely acknowledged. In addition to the UNFCCC treaties and agreements, the Group of Seven (G7) decided at the 2015 G7 Summit in Elmau, Germany, to launch a «Climate Risk Insurance Initiative» with the objective «to increase up to 400 million the number of people in the most vulnerable developing countries who have access to direct or indirect insurance coverage against the negative impact of climate change related hazards by 2020» (G7, 2015a; G7, 2015b). In

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Many communities and countries are already highly vulnerable to the impacts of climate change induced extreme weather events. Shifting rainfall patterns, intense downpours, heat waves and drought conditions, tropical storms as well as rising sea levels are a daily reality. The latest edition of the Global Risks Report of the World Economic Forum ranks extreme weather events, failure of climate change mitigation and adaptation as well as natural disasters as the most significant global risks in terms of impact, likelihood and trend (World Economic Forum, 2019). Achieving successful adaptation of individuals and economies to climate related impacts becomes the major societal priority out-ranking other risk concerns like aging populations, terror attacks and social unrest or increasing economic vulnerabilities.

Successful adaptation requires both resilience in physical terms (reduced exposures and vulnerabilities) and, especially for residual risks, financial terms. Bringing climatic risks into the insurance value chain can help to address both aspects of resilience. It can reduce

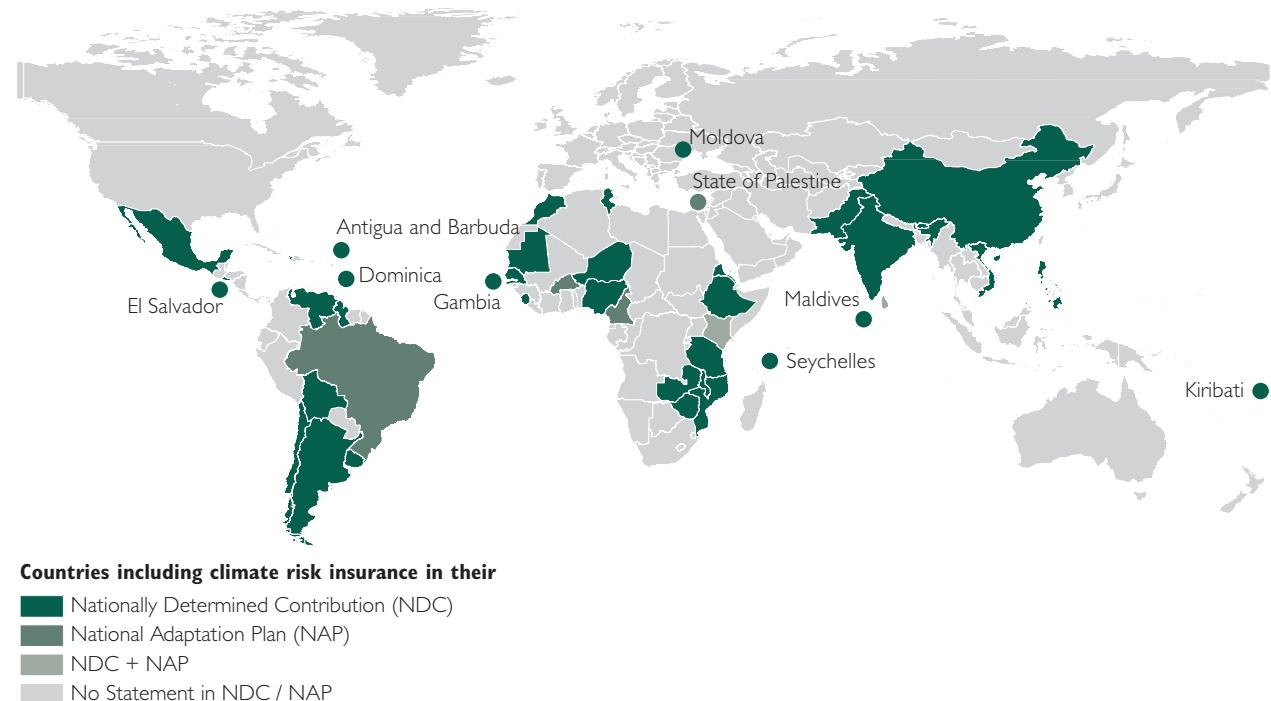


Fig. 1: Countries that intend to implement Climate Risk Insurance as documented in their climate policy plans

(Source: Kreft et al., 2017)

2017, the G20, together with the Vulnerable Twenty (V20) Group of Ministers of Finance of the Climate Vulnerable Forum, initiated the «InsuResilience Global Partnership» to implement and advance climate risk finance and insur-

ance solutions (G20, 2017). Around 25 percent of the countries that brought forward climate action plans aim to use insurance as part of their domestic climate policy with the intention to develop national insurance markets, upscale

existing pilots or participate in sovereign risk pools and new insurance schemes (Kreft et al., 2017). Figure 1 depicts countries considering insurance mechanisms as part of their climate policy formulations.

Defining Climate Risk Insurance

So far, there is no agreed definition of Climate Risk Insurance. We define it in the following way: Climate Risk Insurance (CRI) is a financial risk management instrument used to transfer economic losses caused by extreme weather events from individuals/organizations to insurers or other risk pooling entities. Examples of insurable extreme weather events include storms, hurricanes, extreme rainfall, hail, extreme snowfall, droughts, the lack of wind, the lack of sun, flooding, flash floods, landslides, erosion, storm surges, waves and extreme sea level events. CRI is a legally binding, regulated, mandatory or voluntary contract in which a government, an organization or an individual (the insured) transfers the monetary risk amounting to an agreed upon value (the insured sum) of a potential weather event occurring over a specified period of time to another party (the insurer) in exchange for the advanced payment of a premium. The price for taking the risk (the premium) is calculated on the basis of probability and severity (of the

event). The probability of occurrence must be lower than 100 percent (the rule of insurability). The premium can be lowered through the introduction of deductibles, a self-insured retention and/or an excess of loss/stop loss clause. The indemnification of the insured (the payout) can be financial or physical in nature, depending on the terms of the insurance contract. Although the insurance contract is made before the weather event (ex-ante), the payout can only be transferred after an event (ex-post). For indemnity insurance, a payout is made after a claims handling procedure has been conducted and a claim has been proven. On the other hand, index-based insurance pays out based on pre-determined index-based parametric values. The contract can specify risk reduction, loss prevention and/or loss reduction measures to be applied by the insured on a voluntary basis or as a legal obligation. Implementing such clauses may decrease potential moral hazard or has a decreasing effect on the severity of losses incurred.

Formulating policy aspiration and political intent is one thing, it is a different thing, however, to actually have insurance markets reacting with new insurance products, as well as lines of business and lowering the protection gap. Several solutions have been developed over the past years, with some of them in pilot stage and some in full operation. Starting with a societal objective, these activities were mostly initiated by the public sector or development actors such as the World Bank or other multilateral development banks. Many of the products are parametric, as opposed to indemnity insurance, otherwise referred to as traditional insurance. Parametric insurance products are insurance contracts that make indemnity payments based on the intensity of an event (e.g., hurricane wind speed, earthquake intensity, volume of rainfall) and the corresponding amount of loss which is calculated by a pre-agreed model. Therefore, payouts can be triggered very quickly after the insured event occurs, following the character of a business-interruption insurance limiting immediate financial follow-up consequences from events, which in turn increases the financial resilience. On the negative side, parametric insurance always in-

cludes basis risk, the risk of a mismatch between the index measurements and an insured's actual loss.

One increasingly matured method of Climate Risk Insurance are disaster liquidity products, often on a parametric basis, that cover the immediate financial needs after an event. The most obvious use case are governments which are responsible for emergency relief after the occurrence of a catastrophe. Regional risk pools covering perils like tropical cyclones, droughts or earthquakes are currently in existence in the Caribbean, the Pacific, Africa and South East Asia. The box «Macro Risk Pools: The Example of the CCRIF SPC» provides the example of the Caribbean Catastrophe Risk Insurance Facility (CCRIF SPC).

Moreover, parametric products covering different climatic perils have also been tested and brought to the market on the individual or household level. Several lines of products exist, yet a persistent challenge is scale. Such products, which should be priced at an affordable premium for the client, need to be high number transactions with low per policy costs. However, financial and insurance literacy are low among some of the tar-

get clients and insurance companies do not necessarily have the right experiences as well as instruments to interact with these new classes of consumers. This is why development agencies or specialized insurance companies (often capitalized by philanthropic money) are engaged in the design and set-up of products. Often insurance products are bundled, e.g., to agriculture portfolios. They consist of bundled loan products or are pre-financed by external actors. While this might be a promising strategy to increase the coverage overall, it misses the risk management aspect that traditional insurance customer relationships can facilitate. In addition, the basis risk associated with any parametric product is more pronounced for products on the individual level. The resolution of indices needs to be an order of magnitude higher to accurately reflect the loss realities of individuals. It also becomes a management challenge for the insurer, who lacks protocols to deal with basis risks and might be faced with ex-gratia payment requests. Lastly, when parametric products are not tied to an actual loss adjustment process, the products themselves do not encourage risk reduction or adaptation measures through insurance policy obligations. Many products are

Macro Risk Pools: The Example of the CCRIF SPC

CCRIF SPC is a segregated portfolio company, owned, operated and registered in the Caribbean. It limits the financial impact of catastrophic hurricanes, earthquakes and excess rainfall to the Caribbean and, since 2015, Central American governments by quickly providing short-term liquidity when a parametric insurance policy is triggered. It is the world's first regional fund utilizing parametric insurance in order to give member states the unique opportunity to purchase earthquake, hurricane and excess rainfall catastrophe coverage with lowest-possible pricing. The instrument is designed to allow member states to reduce their budget volatility and to provide some amount of financial resources for emergency relief, such as restoring critical infrastructure and providing assistance to the affected population, thereby assisting to reduce post-disaster resource deficits. It was capitalized through contributions to a Multi-Donor Trust Fund (MDTF) administered

through the World Bank. CCRIF SPC's payouts are made within 14 days of an event. Since CCRIF SPC's inception in 2007, the facility has made 38 payouts totaling a little over USD 139 million to 13 of its 21 member states. CCRIF SPC is supporting governments in protecting their communities, businesses and key sectors such as education, agriculture etc. A rough assessment of the beneficiaries of these payouts show that over 2.5 million persons in the Caribbean and Central America have benefitted directly or indirectly from these payouts after the occurrence of a catastrophe. CCRIF SPC has been supported and capitalized by the EU, UK, Ireland, Japan and Germany among others. Both the participation and the support to CCRIF SPC has been reported as climate change adaptation action under the UNFCCC's national communication and the DAC database of the OECD.

pioneered in high risk countries or communities and insurance payouts are benchmarked towards frequent payouts. This means that the technical risk price is fairly high, further leading to issues of affordability.

The debate around Climate Risk Insurance is encouraging as it receives further momentum and acceptance in the most vulnerable communities themselves. At the UN Climate Action Summit in September 2019, new policy goals and indicators were agreed on, including, e.g., the request to provide benefits to over 500 million people by 2025 and specific targets to reach 150 million people through micro-insurance approaches (InsuResilience Global Partnership, 2019). Insurers, reinsurance companies, insurance brokers and insurance associations are collaborating in the Insurance Development Forum to provide solutions to the global resilience challenge and have indicated «to offer up to USD 5 billion of risk capacity for climate risk insurance for the selected countries by 2025» (United Nations Development Program et al., 2019).

However, current ambitions are often a piecemeal approach, especially when considering the long-term trends of further incurring disaster losses. The main challenges center on availability, affordability, financial literacy and strategy as well as willingness to pay. Moving forward, the sector will have to forge new strategies and partnerships.

Governments and the public sector will have to engage in providing the enabling conditions for CRI. Insurance is a financial protection instrument that provides its full value when anchored in a risk management strategy along with other risk reduction and retention choices. From this perspective, it is encouraging that more investments in climate and disaster risk finance strategies, which, especially for governments, link disaster response mechanisms to ex-ante financing tools including insurance, are hap-

pening. For populations affected by poverty, the affordability of catastrophe insurance coverage will remain the main challenge. Governments will have to expand their social protection instruments to specifically address the hardships following disaster losses, possibly using instruments of the insurance industry to target and provide financial assistance to those most in need. Countries at their fiscal limit will need help by the international community in order to build such systems. This is also reflecting the moral imperative that the most vulnerable should not bear the consequences of climate change but be assisted instead.

Development agencies, development banks and other development actors should put more focus towards creating effective public-private partnerships that tackle the central CRI challenges. This includes, e.g., the climate data gap. Insurers, reinsurers and brokers, for example, have an interest for climate risk aware societies, however, open data platforms and models, especially in the data poor countries, are not yet existing. Some of the shortcomings of parametric insurance on the individual level may be circumvented by engaging in a group insurance approach. In this way, those insured are pooled and client interactions would be done through group leaders that have an easier understanding of complex insurance coverage. For the insurer, the advantages are lower transaction costs compared to individual sales.

The insurance industry needs to approach the topic of Climate Risk Insurance with higher strategic significance. Product innovation is a prerequisite for enhancing insurance availability. Innovation is the natural role of insurance companies in lowering the protection gap. In addition, companies need to provide the capacities to engage with governments and other public actors in order to establish structuring partnerships that address the risk transfer needs of climatic disasters and rationalize disaster risk management in general. Initiatives like

the Insurance Development Forum are important for collecting the voices within the insurance value chain. However, the participation of the industry is not yet universal. The insurance industry is well advised to proactively participate in structuring supply and demand side interventions, helping to lower the protection gap for climatic disasters while underwriting profitable business.

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