



STUDY

Climate Risk Financing

A Brief Analysis of Financial Coping Instruments
and Approaches to Close the Protection Gap

Published by

Brot für die Welt
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und Entwicklung e. V.
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Printed by Poppen & Ortmann KG,
Freiburg

Art. Nr. 129 700 520

Donations

Brot für die Welt
Bank für Kirche und Diakonie
IBAN: DE10 1006 1006 0500 5005 00
BIC: GENODED1KDB

March 2019

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Executive Summary

This paper presents and discusses new and established climate risk financing instruments and approaches and how they could better contribute to closing the protection gap in vulnerable countries. It provides information and new ideas to civil society organizations and policy-makers who are engaged in the broader debate on finding financing solutions to compensate climate-induced loss and damage following the principles of equity and climate justice. A further aim is to address knowledge gaps and misconceptions about what can be expected and what cannot be expected from risk financing instruments. It is an analytical paper, presenting fact-findings and some recommendations derived from research, but it is not a policy paper.

In terms of recommendations, Bread for the World (Brot für die Welt) supports the development of a fund or a new mechanism designed to compensate for climate-induced loss and damage that recognizes and follows the principles of equity and climate justice, as well as the “polluter pays” principle. Respective proposals will be presented in a policy paper to be released at the end of 2019.

Climate-induced loss and damage are accelerating against the backdrop of unhindered global warming. The cumulated economic losses as a result of extreme weather events amounted to US\$ 3.47 trillion between 1998 and 2017 alone, with the Caribbean, Central America, South and Southeast Asia, Sub-Saharan Africa and the South Pacific facing the highest macro-economic risks.

As a consequence, sustainable development in climate vulnerable countries, particularly small island developing states (SIDS) and least developed countries (LDCs), is being hampered by recurrent damages, thus increasing the risk of lower investments, stranded infrastructure investments, worsening credit ratings, higher indebtedness and, ultimately, lowered adaptive capacity.

It is the role of comprehensive climate risk management strategies, with risk financing its core pillar, to reduce these risks and to protect vulnerable countries and people from losses that go beyond their risk absorption capacity.

Risk financing instruments are, in the narrow sense, categorized according to their sources (i.e. regional/national/international/risk transfer to third parties) and whether they are ex-ante disaster or ex-post disaster instruments. Ex-ante disaster financing instruments, like calamity funds, catastrophe bonds or other climate risk

coping instruments, require proactive advance planning and upfront investments. Post-disaster financing instruments, such as donor assistance, budget reallocation, tax increase or credits, are sources that do not require advance planning. However, the mobilization of post-disaster resources contains an element of uncertainty and takes more time. Countries usually combine a mix of different instruments for their risk financing strategies. However, analysis shows that the protection gap remains considerable.

This paper identifies key challenges to closing the protection gap and increasing the resilience of poor and vulnerable people against climate risks. Affordability of climate risk insurance and the introduction of innovative climate risk financing instruments, for instance a contingent multilateral debt facility providing convertible concessional finance (CCF) that does not lead to the further indebtedness of vulnerable countries, are considered important approaches given that sufficient finance is mobilized to operationalize these instruments in a way that at least partially compensates for loss and damage, with the priority being on letting polluters pay.

This paper concludes with eight recommendations on how to move risk financing forward:

- The mobilization and provision of climate risk financing in the context of comprehensive climate risk management approaches is a crucial prerequisite to closing the climate protection gap faced by vulnerable people and countries. Thus, it should be given significantly higher priority in international policy forums and listed as a permanent agenda item, for instance at international climate conferences (COPs – Conferences of the Parties to the United Nations Framework Convention on Climate Change, UNFCCC), G20 summits and regular meetings held by multilateral development banks.
- Options on how to mobilize new finance should be developed, especially with regard to sourcing financing from the main polluters, industrialized countries and multilateral development banks for the offsetting of climate-induced loss and damage, by no later than COP25.
- Climate vulnerable countries should establish climate risk financing strategies.



When Typhoon Haiyan hit the Philippines in November 2013, thousands of people were killed and injured. More than one million people lost their houses. The Philippines is among the countries that are most vulnerable to climate change.

- New, innovative climate risk financing instruments, such as a CCF, should be designed and tested.
- The InsuResilience Global Partnership and its partners, as well as other institutions, should focus heavily on improving the accessibility and the affordability of protection provided by climate risk insurance to the most vulnerable.
- Regional risk pools like African Risk Capacity (ARC), CCRIF-SPC Caribbean Catastrophe Risk Insurance Facility (CCRIF-SPC) and Pacific Catastrophe Risk Assessment & Financing Initiative (PCRAFI), with the support of developing partners, should work towards the formation of broader, more diversified risk pools.
- Regulatory harmonization towards one Vulnerable 20 (V20) market for financial services and products should be strengthened to enable effective bundling and diversification across geographical areas to reduce costs such as premiums.
- NGOs should increase their engagement with climate risk financing by carrying out policy analysis and research, and engaging with decision makers.

Introduction

Climate-Induced Economic Risks and the Relevance of Risk Financing

A widening range of disastrous, climate change-related, sudden and slow onset events are increasingly causing substantial socio-economic and financial risks that undermine sustainable development and provoke loss and damage. It is the role of comprehensive climate risk management and disaster risk financing strategies to reduce these risks and to protect vulnerable countries and people from losses that go beyond their risk absorption capacity. Three main dimensions of socio-economic risk related to a rising number of climate disasters can be identified.

Loss and damage leading to reduced economic development and lowered adaptive capacity

Economic losses and damage due to climatological, meteorological and hydrological extremes have been on the rise since the 1980s, both in terms of the number of catastrophes and the extent of economic losses. According to data provided by the Munich Re NatCatService (see figure 1), the cumulated economic losses as a result of extreme weather events between 1998 and 2017 amounted to US\$ 3.47 trillion, and those for the year 2017 to as much as US\$ 340 billion.

If indirect damages such as dropping consumption are also included, the total losses would have amounted, on average, to as much as US\$ 520 billion annually over the last decade (World Bank Group 2017). Accordingly, the loss in global GDP growth caused by climate-induced disasters has reached average levels of about 0.4–0.7 percent.

Climate change impacts are very unevenly distributed. Disasters have a much more disruptive impact on less advanced economies (World Bank Group 2012). Developing countries are usually more geographically exposed to climate-induced hazards (being mostly located in the tropics and subtropics), have a higher socio-economic vulnerability (see glossary), and a lower technical and financial capacity (to resist and to recover). According to the latest global climate risk index (Germanwatch 2018), if we examine the effects of extreme weather events for the period between 1998 and 2017, we see that five of the ten most affected countries lie in Central America and the Caribbean, three in Southeast Asia and two in South Asia. Eight of the next ten most-at-risk countries are in either of these world regions or in Africa. Only

one – France – is an industrialized country (see figure 2). Most of these countries belong to the group of low-income or lower middle-income developing countries. While some of these countries rank high in the long-term climate risk index because single extreme disasters have had very severe and long-lasting economic implications (e.g. Puerto Rico), an increasing number of high-risk countries have been recurrently hit by climate extreme events in recent decades, for example the Philippines, Vietnam and Haiti. According to the latest scientific report from the Intergovernmental Panel on Climate Change (IPCC), what all climate vulnerable countries have in common is that their exposure to climate hazards is very likely to increase sharply with rising temperatures. What is more, a very rare one-in-250-year extreme event, for instance a massive cyclone, flood or drought, may become a more recurrent one-in-50-year event, implying that disaster risk prevention and reduction will become a much more pressing topic, and disaster risk financing strategies an urgent necessity. Until recently, risk awareness has not been adequately cultivated in most countries. Despite climate-induced loss and damage increasing year upon year, comprehensive disaster risk financing and climate risk management, which leads to better preparedness and more robust resilience, backed up by risk insurance and other forms of risk transfer (see glossary) to compensate for losses in the worst-case scenario, are, in most countries, not yet well enough established to withstand a major disaster event. Unless attitudes shift, the trend of increasing economic loss and damage is likely to continue. The more climate risks increase, the less a country can afford to disregard disaster risk financing options to improve its protection. This will become particularly relevant if the 1.5°C temperature threshold, which is now being considered by the IPCC (2018) as the new limit to avoid unmanageable climate change, becomes reality.

Increasing risk of stranded assets caused by climate extremes in vulnerable countries

Assets must be protected from damage in order to retain their value – the mere risk of potential damage being caused by future climate extremes can lead to value loss. Such “stranded assets” are investments that have become worthless because they have lost value, become liabilities or been subjected to unanticipated or premature

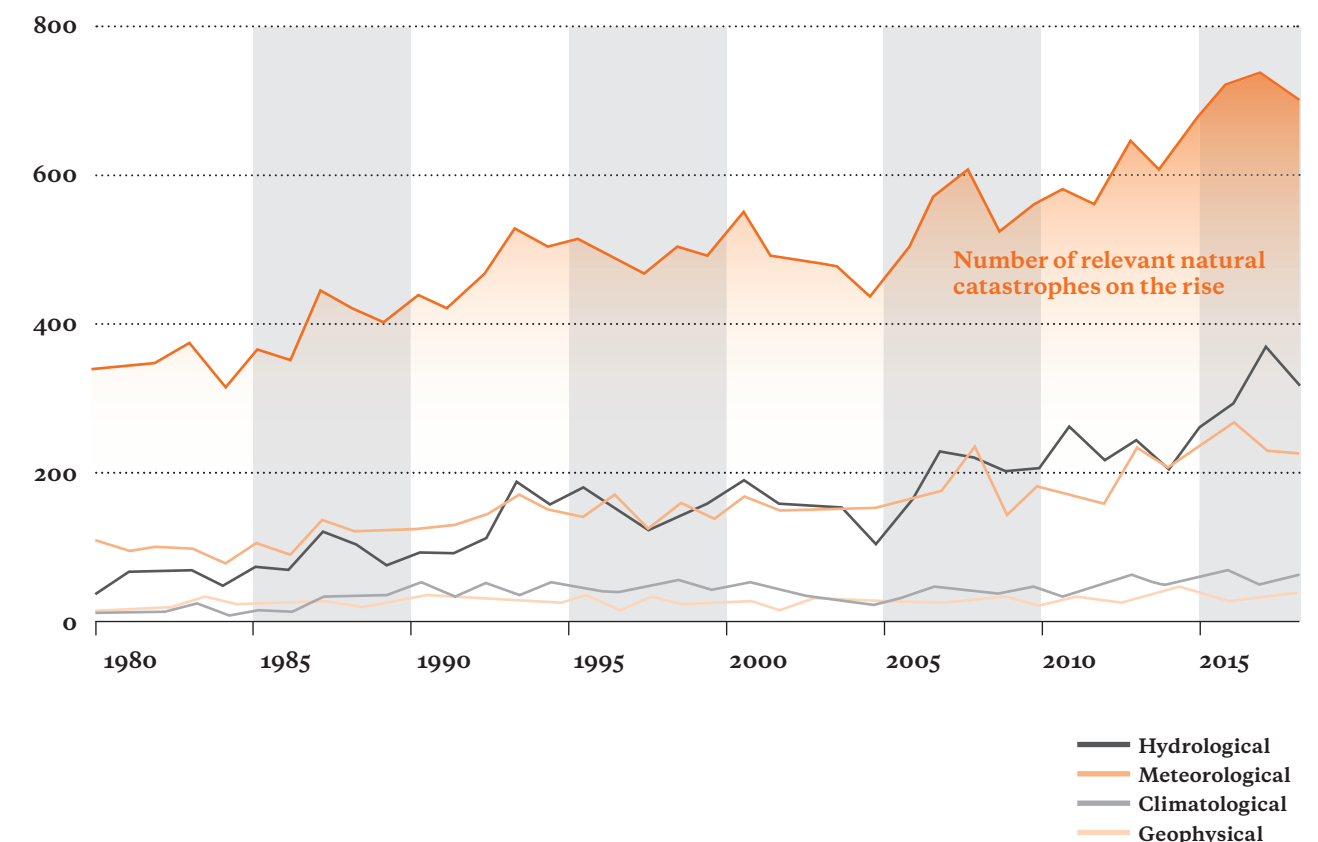


Figure 1: Direct economic loss and damage caused by extreme events (1980–2017)
Source: Munich RE NatCatService online

write-downs. While in the climate change discourse stranded assets are mainly discussed within the context of the fossil fuel industries, assets may also become stranded due to the physical risks of sudden or slow onset climate events, which may affect their operations, e.g. sea level rise.

Many low-lying coastlines, e.g. in river deltas, belong to the most densely populated regions on earth, which are inhabited by more than one billion people. Most are situated in Asia and fall under the category of cities. Coastal communities and urban areas face growing financial risks regarding their public and private infrastructure as a result of sea level rise. The credit rating agency Standard & Poor's has analyzed the exposure of infrastructure in ten US coastal cities to a sea level rise of 20 cm by 2050. Standard & Poor's has concluded that substantial investments in flood barriers are needed to avoid multi-billion assets becoming stranded due to the flooding of houses, roads, harbors, rail lines, bridges and other private and public

infrastructure. Without additional protection measures, the annual average economic losses resulting from a sea level rise of 20 cm would amount to as much as US\$ 4.791 billion for Miami in 2050. The worst-case projection, with sea level rise exceeding 20 cm, would see Miami facing annual losses totaling US\$ 228,589 million by 2050 (Standard & Poors 2015, p. 67). Without substantial investments in comprehensive climate risk reduction, coastal communities and cities all over the world will face considerable stranded assets, which will impact their entire infrastructure. The stranded asset risk and cost would be passed on to either consumers/tax payers, the public sector or investors/local banks that are looking to recover capital. To mobilize the necessary resources to significantly reduce the risks caused by climate change, and to make coastal cities and communities climate-resilient, high upfront investments are needed, which again put an extra financial burden on these communities.

Worsening capital market access caused by climate risks leading to higher indebtedness and lower investment

Worsening conditions in terms of access to international capital have become another huge concern, particularly for climate vulnerable countries and SIDS. They feel they are being penalized by the financial markets for being vulnerable. Research findings from Buhr and Volz (2018) conclude that for every US\$ 10 paid in interest by these countries, an additional dollar will be spent due to climate vulnerability. The study further shows that over the past decade alone, a sample of developing countries have had to pay US\$ 40 billion in additional interest payments just on government debt. Econometric modelling suggests that climate vulnerability has already raised the average cost of debt in a sample of developing countries by 1.17 percent – and a further increase is almost certain, given that the underlying climate risks will intensify. Accordingly, it is estimated that climate change-induced additional interest costs are set to rise to between US\$ 146 billion and US\$ 168 billion over the next decade (ibid).

Recognizing the importance of greenhouse gas mitigation and of resilience building through adaptation in order to minimize climate disaster risks, the credit rating agency Moody's has developed six indicators to assess the possible climate risks of credit borrowers. They include the share of economic activity that comes from coastal areas, hurricane and extreme weather damage as a share of the economy, and the share of homes in floodplains and drought-affected areas. In 2016, Moody's published assessment results, signaling that small islands could have GDP levels four percent lower by 2030 (Climate Analytics 2018) compared to a world with no man-made climate change, which would impact these countries' economies as a whole. For example, Fiji's recent credit profile was determined by not only assessing existing debt and political stability, but also by including vulnerability to climate events and gradual climate change trends (Libanda 2018). Many small island states are already rated below investment grade by Moody's, making it difficult to maintain and attract new investments, including for climate risk management and adaptation.

Because of the climate risks they face – for which they are not responsible – poor and climate vulnerable countries have to contend with lower credit ratings and are thus forced to make higher interest payments. They are the ones having to cover these additional costs, not

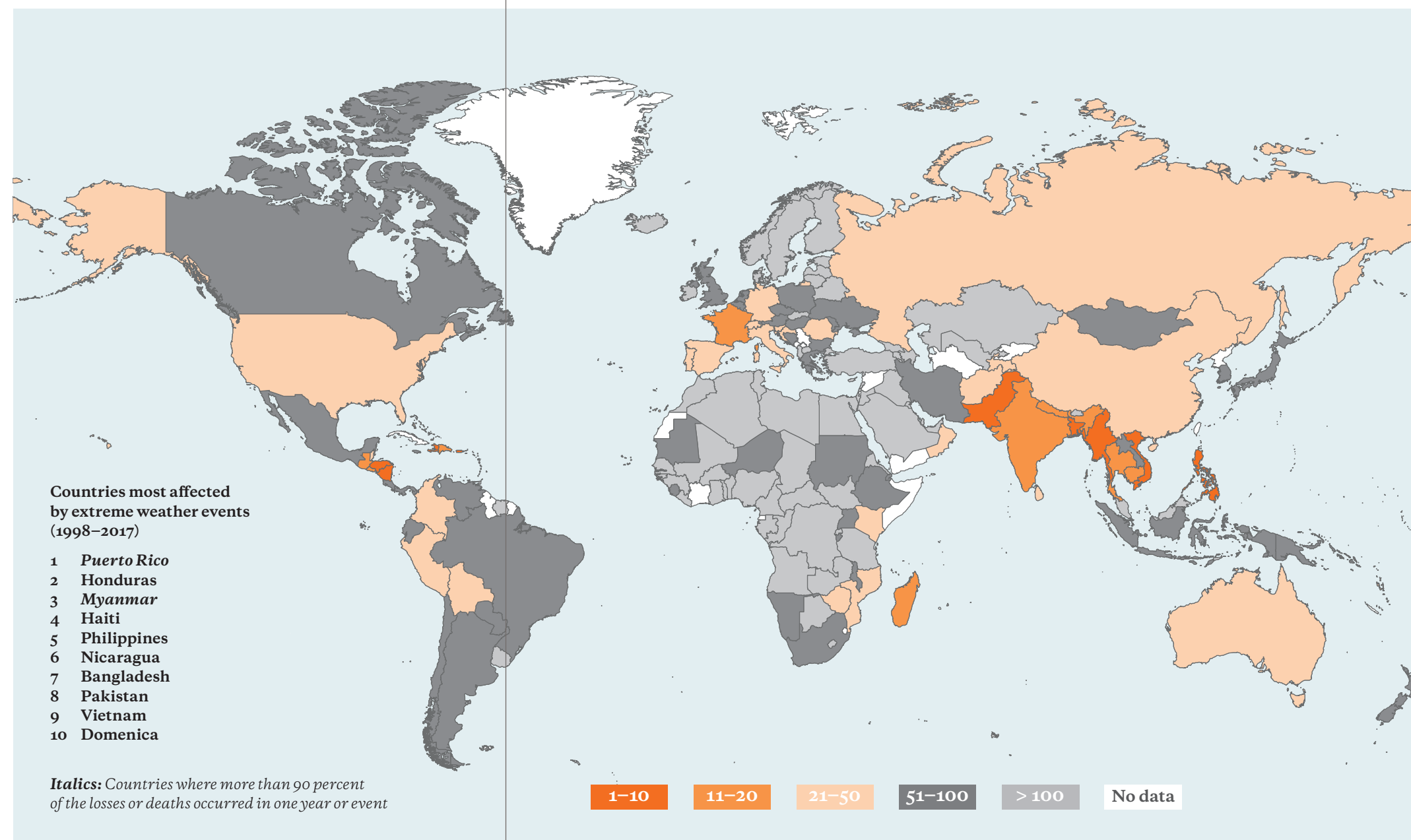


Figure 2: World Map of the Global Climate Risk Index (1998–2017)
Source: Germanwatch 2018

the polluters, which further reduces their financial scope to invest in sustainable development. Simon Zadek, Co-Director of the UN Environment Inquiry into the Design of a Sustainable Financial System, calls it "... blindingly obvious they'll pay more. We've been pushing finance to recognize climate change as a risk. Now it has resulted in increased costs to climate vulnerable countries" (Jackson 2018).

Jackson (2018) pointed to the fact that climate disasters "can both cause governments to spend more than they ideally should (i.e. more or less as much money as they collect in tax over the long term) but can also reduce growth." He called it a "double-whammy effect on creditworthiness, as debt levels increase and with lower growth, the ability to service that debt decreases" (ibid). He criticized that developing countries would be highly

disadvantaged while developed countries stand to receive high ratings on their bonds simply because they are less vulnerable and have the technology, institutions and means to rapidly recover from climate shocks (ibid). The more climate change accelerates, the higher the risk of being downgraded will become for climate vulnerable developing countries. Escalating climate-induced financial risks will eventually erode their ability to attract

Instruments of Climate Risk Financing

In the narrow sense, risk financing instruments are categorized according to their sources and whether they are ex-ante or ex-post disaster financing instruments (World Bank 2012): **Ex-ante disaster financing instruments**, like contingent credit lines, calamity funds, catastrophe bonds or climate risk insurance, require proactive advance planning and upfront investments. In turn, funds would be available almost immediately after a disaster happened, e.g. to support relief operations and the first recovery phase. A climate risk financing strategy must take the critical time dimension – when and how many resources will be required for disaster risk reduction, emergency aid and resilient recovery – into account.

Ex-post disaster financing instruments, like donor relief and rehabilitation assistance, budget reallocation, tax increase or conventional credits, are sources that do not require advance planning or upfront investments. Mobilizing resources in such a way entails an element of uncertainty and takes more time. Thus, these instruments are more ideally suited to the reconstruction phase and longer-term recovery programs with expenditures that are due three or more months after the disaster takes place.

Some of the aforementioned instruments fall into the category of **risk transfer instruments**, like climate risk insurance where the risk is transferred to an insurer, or alternative risk transfer instruments, such as

catastrophe (cat) bonds and other securitized instruments where the risk is transferred to capital markets. In any of these cases, the risk is ceded to a third party, and the sovereign state has to pay a premium (insurance) or interest (cat bonds) to the third party for agreeing to take the risk. The higher the risk, the higher is the price to transfer it.

Though financing resilience building – including climate risk prevention – reduction and preparedness are the most crucial investments to reducing the impact of climate disasters (apart from mitigating greenhouse gases). They are not categorized as disaster risk financing in the narrow sense: Risk financing is thus defined as investments to address or compensate for residual loss and damage that could not be prevented for different reasons. In terms of **financing resilience building** in the wider sense, multilateral climate finance instruments (including the Green Climate Fund (GCF), the UN Adaptation Fund and the Global Climate Resilience Partnership (GCRP)) could be used, in addition to resources provided through bilateral assistance, national budgets and loans, including green bonds. Figure 4 provides an overview of risk financing instruments.

	Ante-disaster risk financing	Post-disaster risk financing	Financing resilience building
National sources	Calamity fund/disaster reserve fund Budget contingency	Budget reallocation Tax increase Domestic credit	Own budget lines/ national funds Domestic credit
International sources	Contingent debt facility	Donor assistance External credits & bonds	Bilateral donor assistance Multilateral climate funds External credits & (green) bonds
Risk transfer to third parties	Climate risk insurance Sovereign (regional) climate risk pools Catastrophe (Cat) bonds		

Figure 4: Climate (Risk) Financing Instruments
Source: Thomas Hirsch

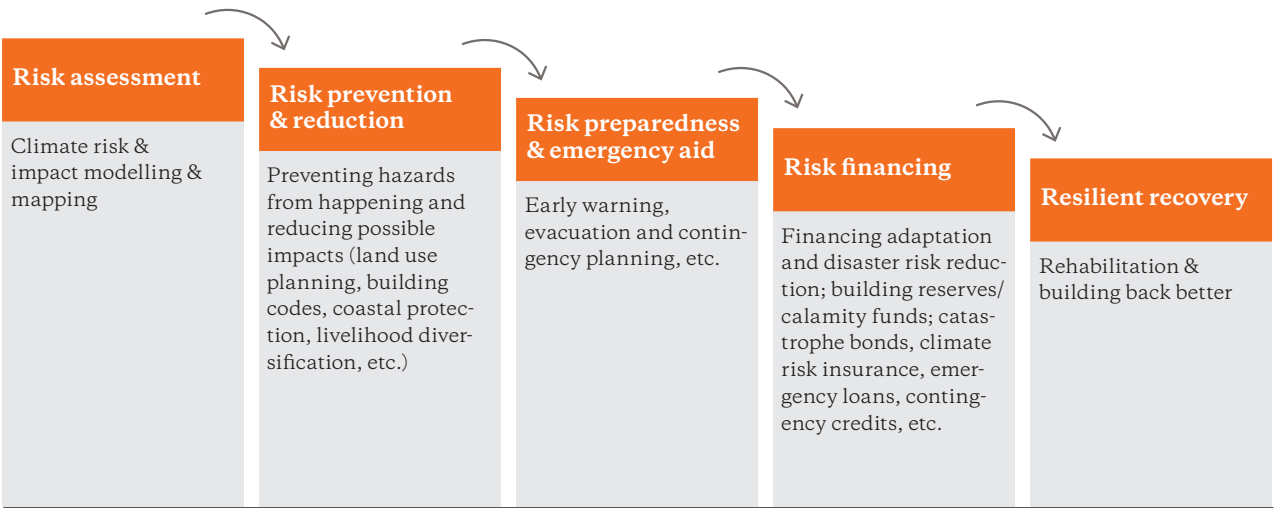
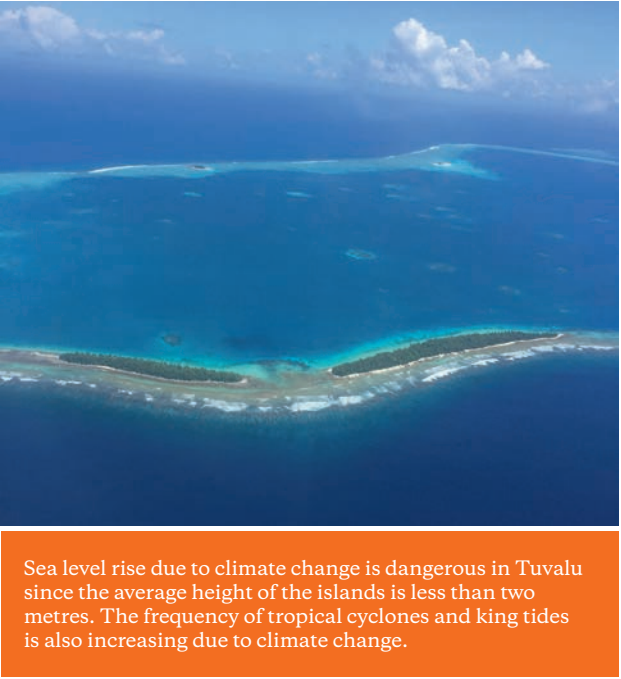


Figure 3: Elements of existing comprehensive climate risk management
Source: Thomas Hirsch

commercial capital. This would ultimately include non-climate-related finance that is used to boost the economy and to invest in sustainable development (Climate Analytics 2018). In a worst-case scenario, poor, climate vulnerable countries, particularly small ones, may end up caught in a financial trap and highly indebted due to climate change, having lost their already limited ability to attract the investments necessary to overcome poverty. Thus, without taking specific disaster risk financing measures, climate change may put vulnerable countries at the ultimate risk of either ending up as fragile states or becoming largely dependent on international support.

To strengthen financial stability (see glossary) and to avoid such a detrimental downward spiral of increasing climate, economic and financial vulnerability (see glossary), comprehensive climate risk management measures need to be established, an integral part of which needs to be a disaster risk financing strategy. Such a strategy, according to the OECD Recommendation on Disaster Risk Financing Strategies (2017), “should be anchored in an integrated framework of hazard identification, risk and vulnerability assessment, risk awareness and education, risk management, and disaster response and resilient recovery”. It should consist of a mix of climate risk financing instruments (see next chapter), reflecting an approach that considers risk transfer tools as important instruments to reduce the economic impacts of disasters, not as a silver bullet but as an integral component, and thereby reduce the costs and increase the effectiveness of even more crucial interventions: “The only sustainable

way to reduce disaster impacts over time is through investments in risk reduction and building resilience against disaster risks” (OECD 2017). Comprehensive risk management strategies in accordance with the “prevent – reduce – absorb” maxim are essential to reduce climate risks and vulnerabilities, and to enable climate-resilient sustainable development (for further details, see Brot für die Welt 2017, 2018). Figure 3 highlights the key steps in a comprehensive risk management approach.





Increasing water scarcity endangers the existence of people living in Ukamba region in Kenya.

Domestic climate risk financing sources

- **Calamity fund/disaster risk reserve:** Created by the government before a disaster happens, providing resources for immediate relief and recovery in the case of recurrent, low to medium severe disaster events. Examples: Calamity Funds/Philippines, FONDEN – Mexico’s National Disaster Fund
- **Budget contingencies:** Set aside by the government before a disaster happens, serving as a budgetary reserve to compensate for losses of recurrent, low to medium severe disaster events.
- **Budget reallocation, tax increase and domestic credits** are ex-post disaster sources to mobilize additional resources in the recovery and reconstruction phase; mobilizing finance from these sources usually requires additional legal steps and thus takes more time as compared with ex-ante risk financing. These instruments should be used only once calamity funds and budget contingencies have been exhausted.

International climate risk financing sources

- **Contingent credits:** A contingency loan or a financial guarantee will be initiated once a disaster-related trigger has been breached. The World Bank Group provides such contingent credit lines through their contingent financing programs, allowing borrowers to rapidly meet financial requirements in case of a medium or large-scale disaster. Contingent credit lines are agreed ex ante.
- **Donor assistance:** Post-disaster assistance provided by international donors for relief, recovery and reconstruction. Donor assistance can be provided in the form of grants, concessional loans or equity capital. This is an important source of risk financing, particularly for poor countries and in the aftermath of medium or large-scale disasters. However, these funds usually require months if not years to be raised and disbursed, apart from immediate support, which is usually minimal.
- **External credits & bond issues:** Resources mobilized on capital markets, i.e. the most expensive form of climate risk financing, particularly in the case of poor and vulnerable countries with low credit ratings (see above).

Risk transfer to third parties

- **Climate risk insurance:** Transfer of climate risks to an insurer, guaranteeing a payout should a certain disaster occur; insurance premiums to be paid by the policyholder reflect the risk: The higher the probability of a disaster, and the higher the payout, the higher the premium; climate risk insurance can be parametric (payout is triggered automatically if a pre-defined parameter, for instance extreme wind speed, is breached) or indemnity-based. The latter ensures a better fit, i.e. compensating payout (i.e. payout reflects actual loss). However, indemnity-based payouts are complex and costly. Climate risk insurance can be an efficient and effective protection mechanism against loss and damage caused by extreme events that are not very frequent but of an extreme magnitude.
- **Sovereign (regional) climate risk pools:** Mutual risk insurance, in most cases owned by the insured sovereign states themselves. Risk pooling across countries, or even regions, can reduce insurance costs significantly: The more heterogeneous the risks and risk

exposures faced by the policyholders in an insurance pool, the lower the costs of insurance coverage. Thus, sovereign risk pools provide an effective mechanism to address losses from less frequent but severe disasters. The Caribbean Catastrophe Risk Insurance Facility – Segregated Portfolio Company (CCRIF-SPC, formerly the Caribbean Catastrophe Risk Insurance Facility) was the world’s first regional risk pool to use parametric insurance (since 2007), followed by the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) (since 2013) and the African Risk Capacity (ARC) (since 2014) (for further information, see Brot für die Welt 2017, p.22 f.).

- **Catastrophe bonds:** Also known as cat bonds. These are capital market-based, risk-linked securities that transfer an ex-ante defined set of risks (for instance cyclone, flood or drought) to investors. Cat bonds are usually used for insurance securitization to create risk-linked securities that transfer a specific set of risks from an issuer or sponsor to investors. In this way, investors take on the risk of a specified catastrophe or event occurring in return for attractive rates of investment. Should a qualifying catastrophe or event occur, the

investors will lose the principal they invested and the issuer (often insurance or reinsurance companies, but also states; for instance, the national government of Mexico or the State of Florida in the case of hurricanes) will receive that money to cover their losses (for reinsurance, see glossary). Catastrophe bonds were first issued in the 1990s after Hurricane Andrew.

Financing resilience building through climate risk management and adaptation

- **Domestic sources:** To finance climate adaptation and risk reduction, governments usually create own budget lines (e.g. for a ministry for disaster management) or set up national climate change funds (e.g. the Bangladesh Climate Change Trust Fund – BCCTF).
- **Bilateral donor assistance:** Grants or concessional loans, e.g. for financing coastal protection, water conservation (e.g. German International Climate Initiative – ICI)
- **Multilateral climate funds:** Grants or concessional loans (e.g. Green Climate Fund)



These people displaced by climate change from Shyamnagar, Bangladesh were seeking shelter from Cyclone Aila on higher grounds.

Climate Risk Financing in the Context of the InsuResilience Global Partnership

Germany launched the InsuResilience Initiative at the 2015 G7 Summit with the aim of significantly improving the protection provided by climate risk insurance in the Global South: By 2020, 400 million additional poor and vulnerable people are to be provided with climate risk insurance coverage. This should ensure a fivefold increase in the number of people with climate risk insurance within five years, with the greatest potential in Sub-Saharan Africa, the Caribbean, the South Pacific and South Asia (BMZ 2015). In the run-up to the establishment of InsuResilience, consultations were conducted with potential partner countries, insurance initiatives and development banks as well as with the private insurance industry and NGOs. InsuResilience has always argued that it will not be successful without broad participation (Brot für die Welt 2017). By and large, climate risk insurance is a little-known instrument beset with many misconceptions and false expectations, for instance the expectation that risk insurance would deliver fast benefits to policy holders, or that insurance premiums would be paid back if no damage occurs. It thus takes time to increase understanding, develop targeted instruments and to widen protection. In this context it is crucial to understand that climate risk insurance is not a suitable risk transfer instrument either in the case of frequent extreme events or in the case of slow onset events, such as sea level rise, desertification or the adverse impacts of glacier retreat (see glossary).

Affordable access to climate risk insurance has been a key concern of the InsuResilience Initiative from the outset. In 2017, a working group was established to develop proposals for smart support. It has started to investigate the options that exist to make climate risk insurance more accessible for poor and vulnerable countries. The aim is to enable countries to decide which solutions are appropriate in which context. Important principles for this undertaking could include avoiding the creation of dependencies and disincentives to do less in terms of disaster prevention, while underlining the exceptional nature of disaster relief (ibid). Furthermore, it has always been rightly stressed by InsuResilience that climate risk insurance coverage should follow the pro-poor principles as adopted by InsuResilience to provide guidance on designing climate risk insurance solutions that support closing the climate protection gap of climate vulnerable populations. These principles include comprehensive needs-based solutions, client value, affordability, accessibility, participation, sustainability, and an enabling environment.

In 2017, InsuResilience's start-up phase came to an end. The main features of its multi-actor partnership approach were finalised, and the implementation started by testing and putting into place the ideas developed. Testing approaches to the transfer of knowledge to developing countries has been placed high on the agenda. This includes supporting the creation of needs analyses and cost-benefit calculations for climate risk insurance, data analysis, risk modelling and risk pooling, the creation of the necessary framework conditions, and raising awareness about climate risk management, as well as evaluating lessons learnt from climate risk insurance approaches in consideration of their benefits for poor and climate vulnerable people. A good impact assessment is particularly important, answering questions such as: How many people are actually protected? Are the most vulnerable people being reached? And is their resilience being strengthened in the face of disaster? InsuResilience has developed the tools needed for monitoring and evaluation, but a standardized reporting system, covering all insurance systems and risk pools that work together with the Initiative, is still to be established (ibid).



The Caribbean country Haiti is regularly battered by tropical storms such as Hurricane Matthew which hit this house in Les Cayes in 2016.

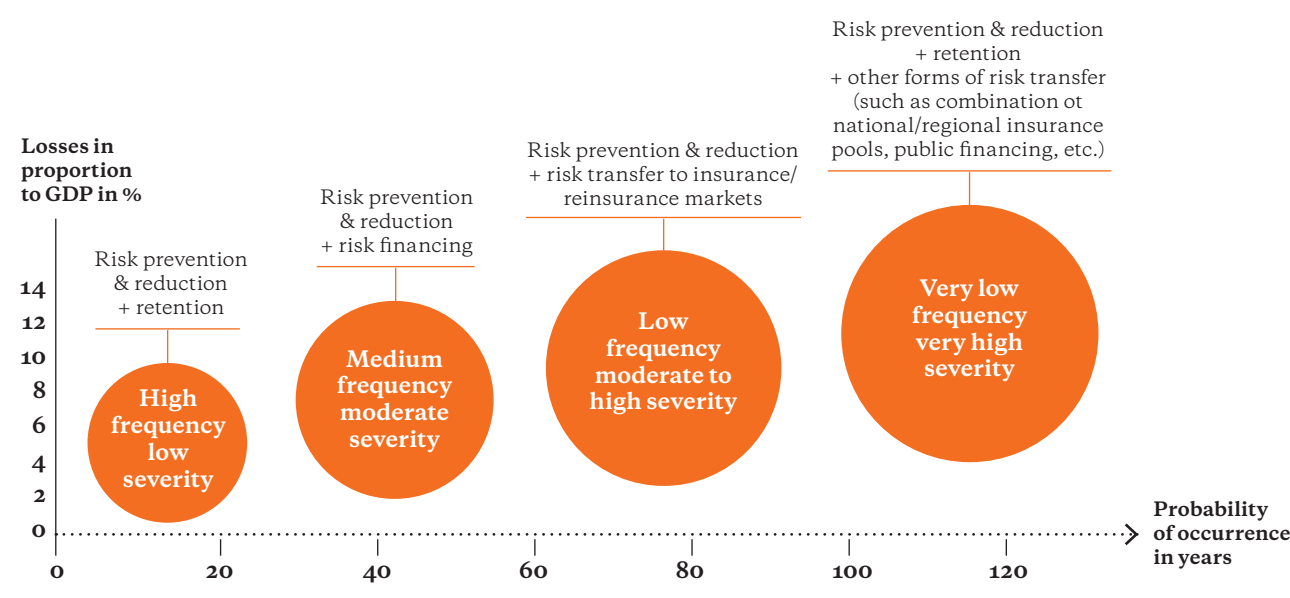


Figure 5: Optimal sovereign disaster risk financing according to different risk layers.
Source: MCII, *Climate Risk Adaptation and Insurance in the Caribbean Project*, 2018

External credits and green, blue and resilience bonds

Resources mobilized on capital markets is usually the most expensive form of financing resilience building.

Green bonds are a special category of bonds, intended to encourage sustainability and to support climate-related or other types of special environmental projects. If certified, green bonds sometimes come with tax incentives such as tax exemption and tax credits, making them a more attractive investment compared to a comparable taxable bond. To qualify for certified green bond status, they have to be verified by a third party, for instance the Climate Bond Standard Board (for more information, see <https://www.climatebonds.net/standard/governance/board>).

Resilience Bonds have become very attractive since they not only guarantee money flows (e.g. like cat bonds in the case of losses) but also guarantee a structural improvement in an area of resilience building and thus lower the actual risk over time. Concrete examples are the “Blue Forest Resilience Bond Idea” (<http://www.blueforestconservation.com/old4/>) or the financing of marine resilience building by The Nature Conservancy (TNC) (<https://www.reinsurancene.ws/swiss-re-backs-innovative-coral-reef-insurance-solution/>).

The InsuResilience Secretariat is also active in this area (coastal resilience).

Selecting the optimal mix of climate risk financing instruments through risk layering

Climate risk layering is an approach used to design risk financing strategies with an optimized mix of climate risk financing instruments. The main selection criteria for risk layering are the frequency and the severity of disasters. Usually a bottom-up approach is suggested: The government secures funds (i.e. a calamity fund, budget contingencies) to deal with relatively frequent but less severe events (**low risk layer**). Contingent credits, conventional credits, donor assistance and budget reallocations, combined with risk transfer instruments, are most appropriate to deal with moderate, less frequent risks (**medium risk layer**). Risks of high severity and very low frequency should best be transferred to third parties, including regional insurance pools (**high risk layer**) (for more information, see MCII 2016, World Bank 2012, 2017). To reach a comprehensive risk coverage that ensures cost effectiveness, climate risk financing strategies should shrewdly combine different ex-ante and ex-post risk financing instruments, as well as risk prevention and reduction measures, to leverage their costs.



The tiny island state Kiribati is particularly affected by climate change. Due to sea level rise, its 33 atolls are sinking. Coastal erosion and coral bleaching further endanger the life of the islands' 95,000 inhabitants.

Moving from a G7 to a G20 risk insurance and risk financing initiative

In 2017, Germany used its G20 presidency to place the issue of climate resilience high on the G20 agenda. On the recommendation of a study conducted by the World Bank (2017), the InsuResilience Global Partnership for Climate and Disaster Risk Finance and Insurance Solutions was initiated at the G20 summit and formally launched at COP22 in Bonn in 2017. The InsuResilience Global Partnership brings together governments, international organizations, and actors from civil society, the private sector and academia. According to its understanding, it particularly builds on collaboration between G20 and V20 countries. The V20 Group of Finance Ministers was founded in October 2015 to act as a high-level policy dialogue and action group pertaining to climate change and the promotion of climate-resilient and low-carbon development. Despite its name, the V20 Group now spans over 48 countries and represents over one billion people.

Compared to the 2015 initiative, the InsuResilience Global Partnership is broader in its scope:

- Focusing on different climate risk financing solutions, including but not limited to insurance
- Has no quantified targets (e.g. 400 million people additionally insured by 2020), and runs indefinitely, i.e. beyond 2020.

The German government, however, still sticks to the former benchmark of providing climate risk insurance coverage to 400 million additional people by 2020.

There are more differences to the initial G7 InsuResilience strategy. Whereas from a development cooperation perspective, the G7 is viewed as a donor community with a long tradition of and vast commitment to international development and climate financing, this is not the case with the G20. In this respect, the InsuResilience approach cannot simply be transferred; it needs to be embedded within a broader context. The approach to building regional risk pools, with the aim of finding ways to reduce the cost of risk financing, is one of the features that has gained in relevance. It presents an approach that could also be applied to South-South cooperation and to national initiatives in populous countries that face highly heterogeneous risk structures, such as India or China.

The multi-stakeholder approach of the InsuResilience Global Partnership brings together different actors with partially divergent interests, such as stakeholders from multilateral development banks, governments from industrialized and developing countries, and actors from the humanitarian aid and development cooperation sectors, academia and the insurance industry. The level of coordination that this involves is very high and the difficult negotiations that led to the formation of the InsuResilience Global Partnership illustrate how challenging it is to agree on a coherent approach, with common ownership of all actors involved. It therefore remains to be seen how well the approach can be implemented. From the perspective of the vulnerable states, the crucial question is whether the Partnership can provide them with added value. In fact, the success of the InsuResilience Initiative will be measured on whether it is able to place the primacy of climate risk insurance for

the poor and vulnerable, and their micro, small and medium enterprises, at the core of the Partnership and strengthen this aspect within such a broad forum. Moreover, an assessment of the continued development of the Partnership needs to take another important criterion into account: the extent to which the V20 remain involved.

The road ahead: Strengthening cooperation with the V20 climate vulnerable countries

But to what extent has the InsuResilience Global Partnership already managed to operationalize its potential to reduce the gaps in protection by increasing climate risk financing, particularly to the benefit of climate vulnerable countries?

At least at the discourse level, the acceptance and readiness to provide (temporary) premium support has increased, as the discussion at the 2nd InsuResilience Partnership Forum in Katowice, which took place back to back with the COP24 in 2018, showed. Apart from building in-country climate risk insurance knowledge and capabilities at all levels, putting this approach into practice at a significant scale should be one of the top priorities in 2019. Unless such steps are taken, climate risk insurance will remain inaccessible for the climate vulnerable and the widening protection gap will continue to grow.

In terms of governance, it is an encouraging sign for enhanced cooperation between V20 and G20 countries that the Minister of Finance of the Republic of the Marshall Islands and the German Parliamentary State Secretary to the Federal Ministry for Economic Cooperation and Development co-chair the Partnership's High-Level Consultative Group (HLCG). However, the real litmus test for successful V20-G20 cooperation on reducing climate disaster risks will be whether it can produce concrete results in terms of reducing vulnerabilities and fairly offsetting the climate-induced losses and extra financial burdens suffered by vulnerable countries.

As stated in the HLCG, the V20 made it clear that its members need to protect critical infrastructure, industries and small enterprises as their economic backbone against climate change. To facilitate the necessary protection, the V20 endeavors to enable private sector uptake of insurance in V20 economies. V20 national markets, however, are often too small to be viable and the risks faced are too distinct to be diversified. That is why

the V20 is currently developing the Sustainable Insurance Facility (SIF). The SIF, aligning with the objectives of the Partnership, is envisioned as a V20-initiated technical assistance facility that enables country-level insurance solutions aimed at medium and small enterprises for the financial protection of key economic sectors and, in particular, their value chains. A second objective will be the de-risking of investments in renewable energy and financial protection.

Over time, the SIF would ideally substantiate the gradual build-up of regional risk transfer solutions that connect several, country-led initiatives across V20 economies, allowing pooling across different geographical areas and addressing the common market constraints and barriers the V20 face. Furthermore, the V20 strongly believe that there is a need to not only come up with a broader range of finance instruments, but to also – with innovative linkages between existing financial instruments – build the most cost-effective, complementary solutions that provide resilience dividends. Over time, such shaped climate and disaster risk financing architecture should develop into a wider agenda of economic resilience and financial stability in the face of climate change.

The launch of the InsuResilience Investment Fund (IIF) and the Solutions Fund (ISF), both initiated by Germany under the auspices of InsuResilience and designed to be instrumental for the development of climate risk insurance products, are steps towards that end (for further information, see <https://www.insuresilience-solutions-fund.org/en> and <http://www.insuresilienceinvestment.fund>). However, not only is climate risk insurance no silver bullet, the products and regional risk pools currently operating have yet to succeed in massively scaling up their protection shields for climate vulnerable people. For instance, according to its first evaluation, the African regional risk pool, African Risk Capacity (ARC), founded in 2012 and operational since 2014, is struggling to maintain – let alone significantly enhance – its protection shield (E-Pact 2017). Aggressive steps are thus needed to ensure InsuResilience meets its objectives, namely of “closing the protection gap and increasing the resilience of poor and vulnerable people against climate risks and disasters”, as jointly stated by the co-chairs of the High-level Consultative Group of the Partnership at its 2nd forum in Katowice (see <https://www.insuresilience.org/second-insuresilience-partnership-forum-in-katowice-paving-the-way-to-effective-risk-financing-solutions/>).

The Remaining Climate Protection Gaps

To what extent are the climate disaster risk financing instruments put forth in this paper suitable for closing the protection gaps – and what are the main challenges? To answer these questions, we must reexamine the main socio-economic risk dimensions related to climate disasters.

The main challenges in offsetting the economic loss and damage associated with climate events

Climate risk insurance has become the most promoted instrument for the transfer of climate extreme event risk, particularly due to InsuResilience. Climate risk insurance is an important instrument, yet it remains unknown in many climate vulnerable countries. It may have the potential to avoid humanitarian disasters in the aftermath of a climate-related extreme event by distributing the burden across many shoulders, and if access and affordability are ensured, it might even be the most efficient instrument to help the poor recover quickly from an extreme event. Climate risk insurance essentially has two immanent limitations that restrict its coverage against climate risks:

Affordability of climate risk insurance for the most vulnerable is not ensured and will become even more limited if the frequency and/or magnitude of climate disasters further increase, as forecasted. There are a number of options to extend affordability and coverage. These three are currently the most promising:

- Reducing insurance premium prices by **bundling more diversified, large risk pools**, preferably across a large and diverse geographical area and including as many different policyholders as possible. According to a recent World Bank Study (2017), the formation of a broad risk pool that includes around 90 low- to middle-income countries from Asia, Europe, Latin America and the Pacific could reduce costs by up to 50 percent compared to regional risk pooling.
- **Premium support** provided by international donors – or, better yet, by the main GHG polluters – is a prerequisite to massively scaling up insurance in the most vulnerable countries, as the experience gained from the first regional risk pools (e.g. ARC) shows. The InsuResilience Global Partnership, amongst others, should take steps to fund insurance premiums for the poor to

close the protection gap. This would also be a first important step to fulfilling human rights obligations and to paving the way for the introduction of the polluter pays principle into climate risk financing.

- **Better linking of social protection with climate resilience building:** Adaptive and transformative social protection systems, with the support of climate risk financing mechanisms (e.g. international donor assistance, climate risk insurance, contingent debt facility), could mobilize several synergies that exist between social protection and risk management if they enable counter-cyclical social expenditure to stabilize the socio-economic situation in times of disaster.

Climate risk insurance is also limited to the hedging of rare but very serious events that cause high levels of damage. It is neither suitable for insurance against frequently recurring damage nor as coverage against gradual damage, such as that caused by sea level rise.

The more frequently extreme events occur, the more damage will be caused by less extreme but highly recurrent events – as well as by sea level rise – and the larger that specific area of the protection gap that cannot be closed by risk insurance will become due to the instrument's immanent limitations. If climate change continues unabated, the efforts and funding currently committed to insurance also runs the risk of being lost. Due to the inverse relationship between greenhouse gas emissions and insurability, mitigation action must be scaled up significantly to maintain the feasibility and potential of insurance solutions. In addition, the use and benefit of combining insurance with other risk financing approaches previously discussed in this paper should continue to find equal consideration and not be neglected to the benefit of currently popular risk transfer instruments.

The main challenges to avoiding stranded assets as a result of climate extremes

The only way to prevent public and private infrastructure in zones with high risk exposure, such as low-lying coastlines, becoming stranded assets due to the physical risks of sudden and slow onset events (e.g. sea level rise) are **massive investments in risk prevention and reduction** (e.g. flood barriers) combined with fast and deep GHG emission cuts as demanded by the IPCC (2018). SIDS, as well as coastal communities and cities in other

vulnerable developing countries, are facing large-scale stranded assets that will impact their entire infrastructure. Mobilizing the resources to enable resilience will overburden these states if they are left either alone or solely dependent on regular capital markets. These nations require financial support to build their resilience at scales that far exceed the current climate finance levels (ACT 2018). This is an issue that must be addressed when designing the future climate financing architecture.

The main challenges to avoiding worsening capital market access as a result of climate risks

It is a fact that climate vulnerable countries already pay significantly higher interest rates solely because they are climate vulnerable, and that the projected increase in severe flooding and disastrous cyclones may further worsen their credit rating by an average of 20 percent according to simulated models (Buhr/Volz et al. 2018). This further penalizes these countries and deprives them of fair conditions in accessing capital markets in order to finance low carbon, climate-resilient, sustainable development pathways. Not only do these countries suffer disproportionately from economic loss and damage due to

climate change, which they bear no responsibility for, they also have to pay higher interest rates because of the accelerated climate risks they may face in future, which they also have played no part in causing. This market logic leads to a **perpetuated discrimination that needs to be addressed** by the international community **through new risk financing approaches** aimed at compensating for this unfair discrimination. Therefore, it is another important issue to be addressed by:

- **the UNFCCC, particularly the International Warsaw Mechanism (WIM)** in its discussions on comprehensive risk management and on enhancement of financial support to address loss and damage,
- **the consultations of the G20 and V20** on collaboration and facilitation of support in addressing climate risks, which disproportionately – and through no fault of their own – affect V20 countries,
- **multilateral development banks** and other relevant stakeholders in the international finance system in the context of designing effective and efficient climate risk financing strategies, instruments and facilities, and
- **national political decision makers and stakeholders** from civil society and the business sector to overcome widely spread insurance illiteracy and to find nationally appropriate and fair solutions.



Climate-induced droughts endanger the livelihood of people and animals especially in Sub-Saharan Africa. Consequently, conflicts and migration are rising.

New Options to Close the Climate Protection Gap

In order for any disaster risk financing strategy to be successful, it is key that it mitigates the risk of a state's credit rating being downgraded due to its level of exposure to climate change risks. **The Warsaw International Mechanism, multilateral climate funds and other relevant stakeholders, in cooperation with V20, should therefore design new hedging instruments for developing countries to mitigate climate risks when issuing bonds. At national level, such approaches should be backed by the design and implementation of climate risk management strategies that are responsive to identified climate change impacts and that enhance resilience.** In order for them to be operational, they need to be well capitalized and managed sustainably. Furthermore, mainstreaming and incorporating climate change risk into development planning and budgeting processes is key to achieving resilience and attaining a sound credit rating (Jackson 2018).

What options are available to offer climate vulnerable countries access to the necessary financial means to implement their disaster risk financing strategies? It is clear that dynamic access to innovative financing for a socio-economic transformation towards climate-resilient, low carbon development is required while avoiding further indebtedness. **Innovative financing implies accessibility, predictability and that financing conditions are fair in the sense that they do not bear the risk of further indebtedness caused by the impacts of climate change.** Furthermore, innovative financing options should incentivize **transparency** of action as well as support strong **ownership** and intense **collaboration** between vulnerable countries and the financing partner institutions.

Contingent debt facilities are contingent financing programs that are usually offered by multilateral development banks. They allow for concessional debt based on loans that are extended on terms substantially more generous than market loans and, as previously mentioned, are already a typical disaster risk financing instrument. However, it is important to **further improve such facilities by better aligning incentives on the design and implementation side:** If disaster strikes, contingent credit lines are usually provided by multilateral banks, such as the World Bank, to vulnerable countries as a main financial source to recover from the shock. These loans are concessional, i.e. provided below market rates, but linked to a sovereign debt guarantee provided by the borrowing country, meaning that the repayment is guaranteed. Countries will thus be further indebted when

accessing these credit lines in order to recover from climate-induced losses and damages. Higher indebtedness, in turn, will negatively affect the country's credit rating and with it its access to finance, thus limiting its long-term ability to invest in a climate-resilient, low carbon future. The negative effects of contingent debt facilities could be alleviated **if the sovereign debt guarantee component were to be reduced or suspended.**

A new and innovative instrument based on this approach of resilient debt management could be a **contingent multilateral debt facility providing convertible concessional finance (CCF).** The provision of CCF would require the alignment of incentives in the design phase and the implementation phase, i.e. it would be contingent on using the finance provided for ex-ante agreed disaster risk management measures that effectively reduce risks and address damages. Risk financing in the form of CCF would consist of highly concessional convertible debt instruments and grant-to-concessional debt, working with the following incentive: To build resilience against high climate risks, this step should first be supported by grants. If successful, the support could be converted into pre-approved concessional debt terms. Should a project financed by concessional debt fail (subject to ex ante agreed indicators for success and failure), the debt should be converted into a grant. Such an approach would help overcome the dangerous spiral of worsening credit ratings, rising indebtedness and more stranded assets caused by climate change. It would enable climate vulnerable countries to mobilize risk capital for investment into resilience building and higher climate ambition. It would benefit climate vulnerable communities and people, and it would factor solidarity and justice into climate risk financing by offsetting economic loss and damage caused by climate extremes. It would promote socio-economic and financial inclusion as well as climate resilience. Finally, it would be a new hedging strategy of global common interest that helps to stabilize the international financial and economic systems against climate-induced disasters, which will occur more frequently and on a larger scale in future.

However, **new finance is required** to capitalize a contingent multilateral debt facility that provides convertible concessional finance for climate disaster risk financing and resilience building, and that offsets climate induced loss and damage. Thus, **how the facility could be provided with adequate funding is a key issue that needs to be addressed with urgency.**

Concluding Policy Recommendations

Adequate climate risk financing is an integral part of developing climate risk management strategies for vulnerable developing countries. It is vital that they be operationalized effectively and efficiently. Finally, it is key to address, minimize and offset climate-induced economic loss and damage.

Risk financing has to be provided under fair terms and with a view to avoiding any discrimination or penalization of a state and its ability to access funds that would offer it protection against climate risks for the sole reason that the state is climate vulnerable due to reasons beyond its control. This relates to the protection of climate vulnerable countries, communities and people against:

- climate-induced loss and damage leading to reduced economic development and lowered adaptive capacity;
- increasing risks of stranded assets caused by climate extremes in vulnerable countries;
- and worsening capital market access caused by climate risks leading to higher indebtedness and lower investment.

So far there has been no commitment by industrialized countries and other major polluters to provide any finance to compensate for loss and damage occurring in poor and vulnerable countries as is already the case for mitigation and adaptation.

Despite efforts made to provide climate risk financing on a voluntary basis, such as the InsuResilience Global Partnership and initiatives undertaken by the V20, the protection gap remains significant and is likely to widen even further in future due to ongoing global warming.

Thus, Bread for the World puts forward the following policy recommendations:

- 1. The mobilization and provision of climate risk financing in the context of comprehensive climate risk management approaches is a crucial prerequisite to closing the climate protection gap for vulnerable people and countries.** Thus, it should be given significantly higher priority in international policy forums, **becoming a permanent agenda item, for instance at COPs, G20 summits and regular meetings held by multilateral development banks.**
- 2. In light of insufficient global mitigation efforts, the inadequate provision of climate finance to help countries adapt to the effects of climate change, and the complete lack of funding to compensate for loss and**

damage, a new fund to compensate for loss and damage needs to be established. This fund is required to support disaster risk financing and offset climate-induced loss and damage, and should be mobilized based on the polluter pays principle. As mandated at COP22 in 2016 in Marrakesh (4/CP.22 paragraphs 2(f) and (g)), a technical paper detailing possible sources of financial support aimed at addressing loss and damage shall be prepared by the UNFCCC Secretariat. It shall serve as an input to the review of the WIM in 2019. The WIM's Executive Committee is to assist the Secretariat in determining the scope of the technical paper that shall be available to Parties by June 2019. At the eighth meeting of the WIM's Executive Committee, its members agreed on the terms of reference for the technical paper as well as on an outline. Observers criticized that industrialized countries blocked a decision to include an assessment of how much finance is needed as well as to establish new and additional sources for such a fund – though the so-called Suva Expert Dialogue in 2018 made clear that finance is a crucial issue. The assessment that has now been agreed upon will thus only entail an assessment of already existing funds.

As this paper shows, the existing instruments are insufficient to close the protection gap as required. Effective and efficient risk financing and the offsetting of climate-induced loss and damage requires new funds that are provided to the climate vulnerable in a way that delivers climate justice and that is sourced in line with the polluter pays principle. It is therefore of the utmost urgency **that the community of states, and especially the Parties to the Paris Agreement and the Executive Committee of the Warsaw International Mechanism, develop options to mobilize these funds** in 2019 with a clear outcome adopted by COP25.

- 3. Climate vulnerable countries should establish climate risk financing strategies,** being informed by the **OECD Recommendation on Disaster Risk Financing Strategies** (2017):

- that effectively manage the financial impacts of climate disasters,
- that form an integral part of climate risk management strategies,
- that are effectively aligned with national adaptation planning, sustainable development planning and budgeting,
- that build on a sound multi-hazard risk assessment (for hazard and risk assessment, see glossary),

- that ensure broad participation, cooperation and coordination across relevant public and private sectors, including civil society and the most vulnerable,
- that provide the resources necessary to ensure sufficient institutional capacity and expertise for the assessment of disaster risks and different risk financing options,
- that assess and disclose the appropriate levels of risk retention and risk transfer, taking into account specific vulnerabilities and capabilities,
- that promote participatory and comprehensive risk assessment processes,
- that take into account both the direct and indirect impacts, evaluating both normal and extreme scenarios, anticipating significant future changes due to global warming,
- that raise the awareness of individuals, businesses and subnational governments concerning disaster risks and their financial implications, protection schemes and their own responsibility for managing those risks,
- that implement an enabling financial sector and regulatory framework,
- that ensure the necessary plans, processes and operational capacity are in place to provide timely and fair payment of claims resulting from disasters,
- that evaluate the availability and affordability of risk transfer tools and put them into practice, where appropriate,
- that evaluate the availability and affordability of national public compensation and financial assistance and put them into practice, where appropriate,
- that specifically identify and address the needs of the most vulnerable,
- that analyze the potential impact of climate disasters on macro-economic conditions, public and private infrastructure and services, as well as credit ratings,
- that assess and promote new instruments of climate risk financing, including, inter alia, (regional) risk pools and convertible concessional finance,
- and that enable or strengthen partnerships, e.g. with the private sector.

4. The V20 and its development partners, like the InsuResilience Global Partnership, should design and test new and innovative climate risk financing instruments, such as a contingent multilateral debt facility providing convertible concessional finance (CCF), that help to overcome the dangerous spirals of worsening credit ratings and rising indebtedness and that enable

climate vulnerable countries to mobilize risk capital for investments into resilience building and higher climate ambition.

5. The InsuResilience Global Partnership, its partners and other institutions should put a strong focus on improving the accessibility and the affordability of protection provided by climate risk insurance to the most vulnerable by

- providing premium support, and
- supporting linkages between climate risk insurance and adaptive transformative social protection systems.

6. Existing regional risk pools, like ARC, CCRIF-SPC or PCRAFI, with the support of developing partners, **should work towards the formation of broader, more diversified risk pools,** preferably across a large and diverse geographical area and including as many different policyholders as possible, in order to reduce costs and thereby improve affordability and accessibility. Furthermore, in order to improve transparency, participation, inclusion and effectiveness, regional risk pools and their development partners should take the recommendations provided by MCII (2018), namely:

- regional risk pools should actively encourage member countries to consent to risk pools publishing full details of policies taken out, premiums and risk transfer parameters, payouts and detailed use within agreements;
- donors should provide direct financing to civil society groups in the Global South to engage and build capacity on climate disaster risk finance;
- risk pools and national governments should ensure that civil society organizations are invited to ‘closed’ policy spaces to ensure that risk financing discussions benefit from voices on the ground representing affected communities;
- the World Bank should consult and collaborate with civil society in its Disaster Risk Financing and Insurance Program.
- **Regulatory harmonization towards one V20 market for financial services and products should be strengthened** to enable effective bundling and diversification across geographical areas to reduce costs such as premiums.

7. NGOs should increase their engagement with climate risk financing by carrying out **policy analysis** and **research**, and **engaging with decision makers.**

Abbreviations

ARC	African Risk Capacity
BCCTF	Bangladesh Climate Change Trust Fund
CCF	Convertible Concessional Finance
CCRIF-SPC	Caribbean Catastrophe Risk Insurance Facility – Segregated Portfolio Company
COP	Conference of the Parties to the UNFCCC
CVF	Climate Vulnerable Forum
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	Greenhouse gases
ICI	International Climate Initiative (Germany)
IIF	InsuResilience Investment Fund
IPCC	Intergovernmental Panel on Climate Change
ISF	InsuResilience Solutions Fund
HLCG	High-Level Consultative Group of the InsuResilience Global Partnership
LDCs	Least Developed Countries
NGO	Non-Governmental Organization
PCRAFI	Pacific Catastrophe Risk Assessment & Financing Initiative
SDGs	Sustainable Development Goals (part of Agenda 2030)
SFDRR	Sendai Framework for Disaster Risk Reduction
SIDS	Small Island Developing States
SIF	Sustainable Insurance Facility of the V20
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations Office for Disaster Risk Reduction
V20	Vulnerable Twenty Group of Ministers of Finance of the Climate Vulnerable Forum
WIM	Warsaw International Mechanism for Loss and Damage

Glossary

Concessional loan: Loans that are extended on terms substantially more generous than market loans. The concessionality is achieved either through interest rates below those available on the market or by grace periods, or a combination of these. Concessional loans typically have long grace periods (OECD, see <https://stats.oecd.org/glossary/detail.asp?ID=5901>).

Disaster risk: The potential disaster losses of sudden or slow onset events in lives, health, livelihoods, assets and services, which could be incurred by a particular community or a society over some specified future time period. Disaster risk is a function of hazard, exposure, vulnerability and capacity.

Disaster risk reduction: The concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.

Financial protection: In the context of disaster risks, the level of payment to be expected based on the occurrence of a disaster event and/or the specific costs incurred as a result of a disaster event (e.g. property insurance contract, parametric insurance contract, catastrophe bond, government compensation or financial assistance for disaster losses).

Financial vulnerability: A vulnerability that results from a gap between exposure to damage and loss and the financial capacity to absorb those damages and losses.

Hazard: A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Pro-poor principles: Principles as adopted by InsuResilience to provide guidance on designing climate risk insurance solutions that support closing the climate protection gap of poor, climate vulnerable populations: 1. Comprehensive needs-based solutions; 2. Client value; 3. Affordability; 4. Accessibility; 5. Participation; 6. Sustainability; 7. Enabling environment.

Reinsurance: Insurance that is purchased by insurers from the public or the private sector to cover parts of the risk taken by the insurer; reduces the financial risk of an insurer.

Resilience: 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. The resilience of a community in respect to potential hazard events is determined by the degree to which the community has the necessary resources and is capable of organizing itself both prior to and during times of need.

Risk assessment: A methodology to determine the nature and extent of risk by both analyzing hazards and their potential likelihood and intensity and estimating impacts through the evaluation of conditions of vulnerability and the identification of exposed people, property, infrastructure, services, livelihoods and their environment.

Risk retention: An approach to risk management that involves retaining responsibility for the risk and any costs associated with the materialization of that risk.

Risk transfer: An approach to risk management that involves the transfer of financial responsibility for some or all of the risk and any costs associated with the materialization of that risk (e.g. through a financial instrument such as a property insurance contract).

Slow onset events: Climate-induced, slowly occurring change of hydrological or meteorological parameters. Compensation for loss and damage caused by slow onset events cannot be provided by climate risk insurance due to three reasons: Slow onset events are foreseeable, the magnitude of effects is huge and cannot be expressed in financial terms, and it is impossible to calculate exact losses and premiums.

Vulnerability: The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard and, hence, disaster. There are many aspects of vulnerability, arising from physical, social, economic and environmental factors.

Definitions, unless otherwise indicated, are taken from IPCC (2018), OECD (2017) or UNISDR (2004).

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