

# HOW TO ADVANCE REGIONAL CLIMATE RISK INSURANCES

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*Regional climate risk insurances have become increasingly popular. They promise to quickly provide low and middle-income countries with much-needed cash to cope with the impacts of natural hazards such as hurricanes, droughts or floods. Initial experiences demonstrate that regional climate risk insurances work – in principle. The widespread enthusiasm to advance regional climate risk insurances is therefore certainly warranted. Yet, there is also a lot of room for improvement. This policy brief reviews current regional climate risk insurances and provides the G20 with four policy recommendations for how to advance them.*

## Introduction: The popularity of regional climate risk insurances

Many countries in Africa, the Caribbean and the Pacific are highly exposed to extreme weather events such as hurricanes, droughts and floods. Further, in recent decades, these events have increased in frequency and severity, while their impact has been exacerbated by other factors such as population growth, urbanization trends, overexploitation of natural resources, environmental degradation and climate change. These disastrous developments put lives, livelihoods and development efforts at risk.

Problematically, Caribbean, African and Pacific countries also usually lack the financial resources to respond and adapt to this threat. Funds for rebuilding and other efforts to smooth the impact of these disasters are largely mobilised on an ad-hoc basis by re-allocating budgets. In some cases, countries are totally dependent on the generosity of the international community. This search for funding in the aftermath of a disaster often places additional strain on administrative forces and leads to subsequent delays in public relief and recovery efforts. Meanwhile, lives are lost, infrastructure remains unrepaired, and development gains are reversed.



Hurricane Jeanne  
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Only very recently, with aid from development actors, countries from these regions have come together to address these problems by pooling their scarce financial resources in common regional, self-insurance insurance entities. These regional self-insurance entities have become popular, as demonstrated by the establishment of the Caribbean Risk Insurance Facility (CCRIF) in 2007, the African Risk Capacity (ARC) in 2012 and the Pacific Catastrophe Risk Assessment and Financing Initiative Facility (PCRAFI Facility) in 2016. In exchange for an annual premium, these facilities offer countries limited payouts to cope with the impacts of major disasters.

In contrast to 'traditional' forms of insurance, these facilities make payouts *not* on the basis of real losses incurred as the result of a disaster, but on the performance of a model. The model processes real-time weather data (e.g., wind-speed, amount of rainfall, wave height) and combines it with geophysical, economic and population data to estimate losses *as the event happens*. Once a certain loss level is breached, the country gets a payout – irrespective of whether the model's estimation was accurate or not.

This modeled-loss approach has at least two advantages: it allows for quicker payouts and reduces operational costs. Countries usually get their payout within 14 days because insurers do not need to send loss agents to check and verify claims, as they would do under 'normal' circumstances. This saves time and costs. The unavoidable downside of such a modeled-loss approach is that the payouts may not match the actual losses on the ground.

As of May 2017, CCRIF, ARC and the PCRAFI Facility had provided 28 countries with insurance coverage. The G7, international development actors and the re-insurance sector endorsed the creation of these new regional climate risk insurance tools. In fact, they largely sponsored their development. In June 2015, the G7 decided to further support the expansion of such insurances. Under the umbrella of the InsuResilience Initiative, the G7 announced it would provide additional funding to allow the facilities to expand insurance coverage to up to 400 million people in the 'developing world' by 2020. In November 2016 the mandated InsuResilience Secretariat started its work with the mission to strengthen existing insurance arrangements and to help to scale-up 'good practices'. But what needs strengthening and what constitutes 'good practice'?

This policy brief seeks to contribute to the debate on these questions by offering a short and critical review of regional climate risk insurances. It provides the G20 with suggestions about how to advance regional insurance arrangements and shape the InsuResilience Secretariat's agenda. Its key message is that substantial efforts must be undertaken to make sure that regional climate risk insurances actually reach those they should reach: the poorest segments of society.

The policy brief proceeds in three steps. In the first part, it provides some background information about the purpose and operation of the three regional climate risk insurance entities that currently exist. In the second part, it illuminates some of their key problems. In the third, it outlines some solutions that may cater to these problems. The policy brief is largely based on a comprehensive study of regional insurance facilities written by the author<sup>1</sup>.

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<sup>1</sup> Scherer, N. (forthcoming): Insuring against Climate Change: The Global Career of Regional Index Insurance Instruments. PhD Thesis submitted to the Hertie School of Governance, Berlin, March 2017.

## Background: What are regional insurance facilities and what do they offer?

CCRF, ARC and the PCRAFI Facility are basically regional catastrophe insurers. In exchange for an annual premium (and, in the case of ARC, the submission of contingency plans), they quickly provide cash-strapped Caribbean, African and Pacific countries with funds to limit the impact of major natural disasters. 'Major' refers to events that were modelled to occur less than once every five years. CCRIF offers Caribbean countries insurance coverage against hurricanes, excessive rainfall and earthquakes, ARC offers African countries coverage against drought and the PCRAFI Facility offers the small Pacific island countries insurance against tropical cyclones, earthquakes and tsunamis. Within certain parameters, countries are largely free to decide how much coverage they want to obtain, and the premium varies accordingly. The rule of thumb is the higher the risk covered, the higher the premium. There is no cross-country subsidization.

In any case, it is crucial to understand that the insurance facilities do *not* offer full coverage. What they offer is *limited* coverage. The payouts are generically designed to only cover public expenditures for disaster-related emergency and relief measures and not large-scale recovery measures. The maximum payout per country is capped at a certain level (CCRIF: US\$ 100 million, ARC: US\$ 30 million). As mentioned above, the payout depends on the performance of a model. It computes real-time weather data (e.g. wind-speed or volume of rainfall) and processes with exposure and vulnerability data to estimate losses. Once a certain pre-agreed loss level is reached, the country receives a payout.

Once a country receives a payout, it is largely free to decide how it wants to use it. In the case of CCRIF and the PCRAFI Facility, the payout is not tied to specific expenditures. Countries may use the payout to finance the clearance of debris, provision of shelter, clearance of roads or any other measures they consider appropriate. This laissez-faire approach embraced by CCRIF and the PCRAFI Facility contrasts with the conditionality approach taken by ARC. ARC only makes the insurance payout if countries have submitted a contingency plan detailing how they intend to use the payout. The plan must specify an interventionist, social programme to prevent famine among the vulnerable segments of society (e.g. distribution of food, cash or vouchers) and clarify the policy actors and procedures organizing it. This contingency plan has to be submitted before a country can even buy the insurance, so as to prevent political fraud and incentivize disaster planning.

The different approaches with regard to the use of payouts reflect the slightly different purposes of CCRIF, ARC and the PCRAFI Facility. Historically, CCRIF and the PCRAFI Facility were designed to mitigate fiscal cash-flow problems due to disaster-related tax shortfalls. The insurance should therefore safeguard the liquidity of public finances. ARC, by contrast, was designed to mitigate drought-related famines and ensure food security among the poorest segments of society. In other words, by design CCRIF and the PCRAFI Facility are budget-support tools, whereas ARC was devised as an interventionist, social policy tool.

Importantly, CCRIF, ARC and the PCRAFI Facility are not just 'normal' regional catastrophe insurers. In fact, they offer much more than insurance. They provide countries with data and information on the management of risks and facilitate intra-regional learning exchanges. CCRIF, for instance, offers countries risk maps, small grants for disaster risk reduction projects and training courses. Moreover, it runs a regional scholarship programme to support the spread of hazard-related knowledge in the Caribbean. In 2010, it also conducted a study on the economics of climate change adaptation – a study

that provided decision-makers with information about how climate change will impact specific economic sectors. Similar efforts also apply to ARC and the PCRAFI Facility. ARC, for instance, provides countries with an early warning tool to limit the impact of droughts and more recently also of tropical cyclones. Over the years CCRIF, ARC and the PCRAFI Facility have increasingly become regional platforms for disaster risk management.



**Drought in Mali**  
© Curt Carnemark/World Bank

**Problems: What are key challenges that need to be addressed?**

Initial experiences demonstrate that regional climate risk insurances work – in principle. To date the facilities have made 28 payouts<sup>2</sup> to 16 countries with aggregated payouts adding up to about US\$ 106 million. As climate risk insurances quickly provide cash-strapped countries with much-needed cash, enthusiasm to support and scale-up regional climate risk insurances is surely warranted. Yet, there is also a lot of room for improvement. Several problems need to be addressed:

- 1. Premium affordability:** Fiscally constrained governments face difficult trade-offs and are often unable to pay premiums.

CCRIF, ARC and the PCRAFI Facility offer insurance contracts to countries that face serious fiscal constraints. These governments have to work with very tight budgets and face difficult trade-offs to address pressing and competing needs. Although there may be firm interest in buying insurance or expanding insurance coverage, countries often cannot afford it. Premium financing remains a

<sup>2</sup> ARC is currently processing a payout to Malawi.

challenge. Analogous to the situation with private health insurance, there is a risk that the poorest countries – those most in need – are left with no or inadequate coverage. In such fiscally challenged countries, justifying premiums domestically can also become even more difficult if there has not been a payout for several years. As private insurance markets are still largely underdeveloped in the non-OECD world, the idea of insurance – setting aside a smaller amount of money over a longer time period – remains rather alien to lay citizens. People tend to question – possibly rightly – why the government spends so much taxpayer money on insurance that never pays out, given other urgent short-term needs.

- 2. Post-disaster planning:** Not all insurances are linked to contingency plans. Yet, a quick payout is of limited use without clear plans for how to use the funds.

As outlined above, in contrast to ARC, CCRIF and the PCRAFI Facility do not demand that countries set out guiding principles or rules for how an insurance payout will be used. They are based on a *laissez-faire* philosophy. While this may have its merits, international experience from the fields of disaster management indicates that an emergency plan stating objectives and clarifying responsibilities and procedures *ex-ante* is key to saving lives and livelihoods<sup>3</sup>. Insurance provides the financial means to achieve this. Yet, even a good payout often cannot replace a good plan, given that the “post-disaster decision-making process is far too politicized, leading to delays, poor decisions and bad coordination efforts”<sup>4</sup>. So far, the insurance facilities have tended to downplay the necessity of pre-disaster planning. However, clarifying *who* will do *what when* and *how* is generally important to ensure a process is well governed, and in a political context with limited administrative capacities it is even more crucial.

- 3. Input legitimacy:** Despite regional insurance entities providing more than insurance, disaster management specialists are side-lined within their governance structures.

ARC, CCRIF and the PCRAFI Facility do much more than provide insurance. Over the years they have become hubs for regional disaster management. While this development is certainly positive, it is notable that disaster management specialists are still side-lined within the governance structure of these facilities. The facilities are largely run by finance and insurance specialists, meaning financial interests tend to be more dominant in shaping the strategic direction of the facilities and designing the insurance policies. While finance specialists clearly have their place in an insurance company, they are not disaster experts. If the broader goal of the facilities is to progressively limit the impact of disasters and enhance the resilience of countries, they should ensure those who have the appropriate expertise are given a greater say.

- 4. Accuracy and adequacy of payouts:** Experience indicates a slight tendency towards ‘underpayment’. There is no monitoring or evaluation system in place to indicate whether payouts are adequate.

As pointed out above, since they launched, the facilities have made 28 payouts<sup>5</sup> to 16 countries with aggregated payouts adding up to around US\$ 106 million. It appears that the insurances work *in*

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<sup>3</sup> For these points see, for instance, Clarke D.; S. Dercon, 2016: Dull Disasters? How Planning Ahead Will Make a Difference Clarke. Oxford University Press: Oxford.

<sup>4</sup> Clarke et al. 2016, p.4. [See footnote 3]

<sup>5</sup> ARC is currently processing a payout to Malawi.

*principle* and this is certainly a success. Yet, it is even more crucial to consider whether the payouts are actually accurate and adequate. Research indicates that there is a slight tendency towards 'underpayment'. In at least three cases, payouts were not triggered despite there actually being substantial damage. This 'basis risk'<sup>6</sup> is unavoidable with a modelled-loss approach. The insurances pay out according to a representation of losses rather than on the basis of real losses. Payouts are only as accurate as the models and, by implication, the data that is fed into them. Consequently, inaccurate models or data will lead to inaccurate payouts. While inaccurate payouts might not present a problem for richer countries, they are a serious issue for cash-strapped countries that depend on every single dollar to make ends meet.

Accuracy issues aside, there are also currently no publicly available monitoring or evaluation systems in place that allow for payout tracking or comprehensive impact assessment. It is therefore unclear whether the payouts have been at the right scale or reached those who they were intended to help. Although the insurances are limited in scope – as pointed out above, they are not designed to cover all disaster losses but only a share of them – it appears that the payments are too small to make a difference. They account for only a small portion of the massive financing requirements after a disaster. Without widespread recognition of this inherent limitation, these self-insurance entities risk sending the wrong signal to the international community. If international humanitarian actors and donors think that countries have comprehensive insurance against weather-related disasters, as the term 'climate risk insurance' suggests, they might refrain from providing countries with additional, urgently needed funds.



**Devastation after typhoon Haiyan**

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<sup>6</sup> 'Basis risk' describes a situation where modelled losses do not match real losses.

## Recommendations: How to advance regional climate risk insurances

To address these key problems, the G20 should develop an action plan<sup>7</sup> with a set of concrete objectives to be agreed on by countries committed to advancing regional climate risk insurances. To ensure effective implementation, the action plan should be operationalized through existing initiatives such as InsuResilience and in close collaboration with existing regional insurance facilities and other stakeholders – needless to say the countries themselves. To advance regional climate risk insurance, these G20 countries should aim to:

### 1. Increase affordability via premium support: Provide full premium support for poor countries.

Although donors have made several bi- and multilateral commitments to support the operations of regional insurance facilities, affordability remains an issue for many countries. The G20 should provide full premium support or at least facilitate premium funding through multilateral climate finance funds such as the Green Climate Fund (GCF).

In their current form, the regional insurance facilities require those who are the least responsible for climate change and the least able to finance the premiums to pay the final bill. This is highly problematic from a global climate justice perspective. Rather than requiring the most vulnerable to pay, climate risk insurances should be based on a combination of the ‘polluter-pays’ principle and the ‘ability-to-pay’ principle. The G20 produces over 80 percent of global GDP and is responsible for about three quarters of global GHG emissions. It therefore has a special responsibility to deliver support to the most vulnerable. Providing full premium support should be considered a matter of climate justice. Premium support by the G20 could be related to a country’s greenhouse gas footprint.

An important practical issue is how to minimize incentive distortion<sup>8</sup>. Full premium support could incentivize countries to take disaster risk reduction measures less seriously. Overall, the best way of addressing the impact of disasters is still to mitigate them in the first place. Insurances are and can only be a second-best option. A solution could be to grant premium support on the condition that a government engages in direct or indirect risk-reducing measures, such as building dykes, developing contingency plans, institutional reforms, or disaster education programmes. Applying the conditionality principle would encourage administrative action to save lives and assets. Premium support may also be designed in a more indirect way: the G20 (or other multilateral institutions) may endow the insurance facilities with additional capital reserves so that they can push up their self-retention levels. A higher retention level among the insurance facilities would translate into cheaper re-insurance costs and thus into lower premiums. Lower retention levels would make the insurances more affordable.

### 2. Encourage disaster planning and strengthen disaster risk reduction efforts: Tie the provision of grant support to the development of disbursement plans, and provide additional expertise and funding to build up capacities to strengthen disaster risk reduction efforts.

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<sup>7</sup> I am following here the proposal made by the Munich Climate Insurance Initiative. See Munich Climate Insurance Initiative. 2017: Weathering Climate Change through Climate Risk Transfer Solutions. Bonn. Available at: [http://www.climate-insurance.org/fileadmin/user\\_upload/20170316\\_MCI\\_G20\\_Position\\_2017.pdf](http://www.climate-insurance.org/fileadmin/user_upload/20170316_MCI_G20_Position_2017.pdf) (last accessed 11 April 2017)

<sup>8</sup> See, for instance, Vivideconomics; Surminski Consulting; Call and Consulting. 2016: Final report: Understanding the role of publicly funded premium subsidies in disaster risk insurance in developing countries. Available at [https://assets.publishing.service.gov.uk/media/58752b2540f0b60e4a000119/Final\\_Report\\_EoD\\_Disaster\\_Risk\\_Insurance.pdf](https://assets.publishing.service.gov.uk/media/58752b2540f0b60e4a000119/Final_Report_EoD_Disaster_Risk_Insurance.pdf) (last accessed 15.05.2017)

As it is not so much finance *per se* but early, quick and coordinated action that saves lives and livelihoods, the G20 (in collaboration with the regional insurance facilities) should encourage the development of contingency plans that clarify the usage of an insurance payout *ex-ante*. Moreover, the G20 should support the regional insurance facilities in their efforts to enhance risk awareness and reduce risk exposure.

One way to encourage the development of contingency plans could be to only grant countries full premium support if they develop plans that specify the usage of the funds. These plans should be guided by clear goals and principles, clarifying *who* does *what when* and *how* with a payout. Given that the poorest segments of society are the most vulnerable to disasters, these disbursement plans should, in principle, be designed with a view to reaching them<sup>9</sup>. The most vulnerable can basically be considered as those who suffer from income poverty, who live in remote rural locations or degenerated environments, whose livelihoods depend on natural resources, and who have poor access to markets and economic resources<sup>10</sup>. The plans should be designed to enable quick and coordinated action, but also be flexible enough to be easily adapted to different disaster contexts. The disbursement plans submitted to ARC offer a 'good practice' example here. The G20 could collaborate with CCRIF and PCRAFI to build a scheme that links insurance more systematically to contingency plans. Once again, ARC offers valuable insights as to what this kind of linkage could look like. InsuResilience, in collaboration with the Global Facility for Disaster Risk Reduction (GFDDR) could be tasked with cross-regional assessment to allow for cross-regional learning.

To strengthen disaster risk reduction, the G20 could support the insurance facilities' efforts to enhance risk awareness through the provision of additional funding and expertise. As outlined above, regional insurance facilities do much more than provide insurance. They offer countries valuable information about high-risk areas and issue early-warnings. The G20 could support these efforts by strengthening social or technological infrastructure to make sure the information and warnings issued by the facilities actually reach the population. Overall, satellite-based maps and early warnings are of little use if there is no social or technological infrastructure capable of distributing that information. The G20 could, for instance, support initiatives that build up or aim at consolidating people-centred information networks that can receive and act on warnings. Alternatively, the G20 could support the development of technical infrastructure to enable a mobile technology solution for the dissemination of early warnings (e.g. SMS notifications). This second option would be particularly appropriate for remote areas.

**3. Integrate DRM specialists into the governance structure:** Encourage regional insurance facilities to empower disaster risk management specialists.

Given the increasing scope of the regional insurance facilities' activities, the G20 should encourage them to integrate disaster risk management (DRM) specialists into their governance structure. Systematically integrating DRM specialists into these structures would help to embed insurances more firmly into national and global disaster management and reduction efforts, as well as provide greater input legitimacy. This would translate into more effective insurance arrangements.

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<sup>9</sup> Munich Climate Insurance Initiative. 2017. See footnote 7

<sup>10</sup> Wisner B.; I. Kelman, J.C. Gaillard: Hazard, vulnerability, capacity, risk and participation. In: López-Carresi et. al. 2014: Disaster Management – International lessons in risk reduction, response and recovery. Routledge: Abingdon, p.15



As highlighted above, it is crucial that insurance instruments are better integrated into national and regional disaster response strategies. Ideally, insurance should be part of a larger policy instrument mix for financing and mitigating disaster impacts. DRM specialists are well equipped to strategically advise insurance facilities and countries on how to integrate insurance more systematically into existing disaster response strategies. For example, they can work in close collaboration with the countries to develop guidelines for managing the financial impacts of disasters. They can also act as focal points, organizing cooperation and coordination across the public and private sectors, with responsibilities and expertise in managing the financial impacts of disasters. Where politically feasible, they could also help to leverage bi- or multilateral approaches to smooth the impact of disasters. This is important insofar as disasters do not know borders – sometimes the physical impact of a natural hazard is in country A (e.g. destruction of a dam), while its negative socio-economic impacts are in country B (e.g. flooding of agricultural areas; reduced food production). It is precisely these kinds of transboundary interactions that make cross-border approaches more useful in some cases. DRM specialists can also assist countries undertaking comprehensive risk assessments, collect and bundle local community knowledge, and advise countries on how to incorporate this knowledge into insurance arrangements. Acting at the intersection between various governance levels, they are well placed to provide valuable inputs on how to better link insurance to existing programmes and initiatives. The ARC customization process offers some valuable lessons here.

**4. Improve underlying data and set-up a monitoring and evaluation system:** Support data collection efforts and assess the adequateness and effectiveness of the insurances

The G20 should support the regional insurance facilities in their data collection and analysis efforts. One way to do so could be to provide countries, InsuResilience and other initiatives with funds to expand the necessary weather-related technological infrastructure. In addition, the G20 should support InsuResilience in developing a monitoring and evaluation system that allows for fund tracking, comprehensive assessment and cross-regional learning.

Given the tendency towards ‘underpayment’, it is critically important to improve the accuracy of payouts and thus available data sets. Despite technological innovations leading to substantial improvements over time, data collection and quality beyond the OECD world, in particular in remote and rural areas, remains a challenge. Through projects, partnerships and initiatives such as InsuResilience, the G20 should help to improve the existing weather-related infrastructure by, for example, funding new weather stations and/or supporting innovative data-collection and analysis efforts. The efforts by the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) – a joint data-collection initiative of SOPAC/SPC, the World Bank, and the Asian Development Bank – serves as a ‘good practice’ example on which the G20 can draw. Creating and improving data thereby has multiple uses. Weather-related data can help to inform climate change adaptation policies in a more general sense.

Moreover, the G20 should facilitate the creation of a systematic monitoring and evaluation system to gain knowledge about the adequacy and effectiveness of the insurances. This would help to clarify whether the insurance payouts are adequate, as there is a risk that they do not really make a difference. It is also not at all clear whether the payouts ‘trickled-down’ to localities and reached those they should have helped. Further, there is a risk of fraud and corruption, which greater transparency might help to reduce. A monitoring and evaluation system would also allow for comprehensive and comparative assessments. It ensures joint learning and facilitates improvements to the insurances.

The InsuResilience Secretariat is best placed to conduct the necessary analytical work for developing such an indicator framework and act as a coordinating monitoring and evaluation agency.

## **Conclusion: What needs to be done**

Extreme weather events are on the rise. Exacerbated by trends such as population growth, urbanization, overexploitation of natural resources and environmental degradation, these events can quickly become disasters that put lives, livelihoods and development gains at risk. The recent establishment of regional climate risk insurances provides a partial answer to coping with this disasterous development. They quickly provide countries in the 'developing world' with much-needed cash to limit the impact of disasters. However, while some enthusiasm for regional climate risk insurances is warranted, there is substantial room for improvement. Informed by the notion that climate risk insurances should principally benefit the poor, this policy brief argued that the G20 should advance regional climate risk insurances by:

1. Helping to increase premium affordability by providing full premium support;
2. Encouraging disaster planning and disaster risk reduction efforts at the country level;
3. Encouraging insurance facilities to empower disaster risk management specialists;
4. Supporting data collection efforts and helping to establish a monitoring and evaluation system.

These goals should be framed in a common action plan. In the context of advancing these goals, the G20 should build upon existing institutions and initiatives such as InsuResilience.

*Note: This article gives the views of the author, and not necessarily the position of adelphi or the German Federal Foreign Office.*

The **climate diplomacy initiative** is a collaborative effort of the German Federal Foreign Office in partnership with adelphi. The initiative and this publication are supported by a grant from the German Federal Foreign Office.

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