InsuResilience GlobalPartnership

CLIMATE AND DISASTER RISK FINANCE IN THE IPCC SIXTH ASSESSMENT REPORT

The Role of Climate and Disaster Risk Finance and Insurance in Working Group II's contribution on *Impacts, Adaptation and Vulnerability* to the IPCC's Sixth Assessment Report (AR6)

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March 2022

Background

The use of Climate and Disaster Risk Finance and Insurance (CDRFI) approaches has significantly increased in recent years. The increase in relevance and use is well-reflected in the IPCC's Sixth Assessment report*, which extensively covers the role CDRFI can play as a climate adaptation tool, as well as detailed impacts and observations on the CDRFI sector's response to climate change.

The IPCC report comes with a Summary for Policymakers, a Technical Summary and the full report containing 18 chapters and 7 cross-chapter papers.

Summary for Policymakers and Technical Summary

The Summary for Policymakers of the report mentions CDRFI only scarcely, with the exception of insurance being enumerated among public and private instruments for adaptation finance. The Technical Summary, however, holds CDRFI tools and approaches among the key contributors to effective adaptation to global climate change impacts. Summary statements include the following, with details provided in the full report.

Key Technical Summary statements on CDRFI

"Risk insurance can be **a feasible tool to adapt to transfer climate risks** and support sustainable development (high confidence)" (TS.D.11.1)

"A higher levels of warming, **climate impacts will pose risks to financial and insurance markets**, especially if climate risks are incompletely internalized (*medium confidence*), with adverse implications for stability of markets (*low confidence*)." (TS.C.10.1)

"There is a *medium evidence* and *low agreement* about the adaptation impacts of derivatives-based insurance products. Insurance solutions are difficult for low income groups to access (*medium confidence*). Formal **insurance policies come with risk when implemented in a stand-alone manner**, including risks of maladaptation. (*medium confidence*)" (TS.D.9.2)

" **Index insurance builds resilience** and contributes to adaptation both by protecting farmers' assets in the face of major climate shocks, by promoting access to credit, and by the adoption of improved farm technologies and practices" (TS.E.3)

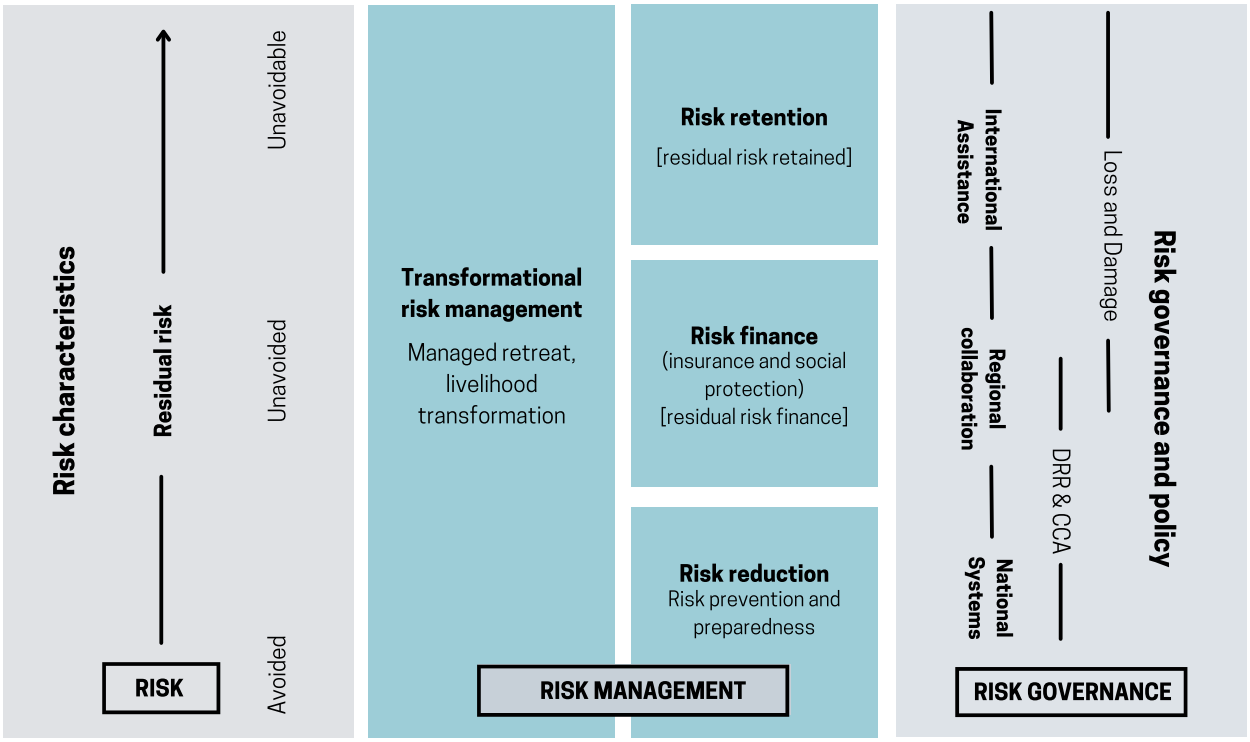
*Intergovernmental Panel on Climate Change (IPCC), 2022: *Climate Change 2022: Impacts, Adaptation, and Vulnerability*. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. In Press.

CDRFI in the full report

Chapter 17: Decision Making Options for Managing Risk

The most in-depth discussion of CDRFI theory and practice is found in the report in section 17.2.2.1 *From Risk Prevention to Risk Financing and Risk Retention*.

As opposed to other references to risk finance in the report, the discussion here is not limited to insurance, though it is recognized that insurance is "the most widely known" from a variety of [risk financing] instruments" (p.20). Particular attention is paid to **regional disaster insurance pools** at the macro-level such as the Caribbean Catastrophe Risk Insurance Facility (CCRIF). The section stresses the role of CDRFI for risk transfer and risk retention in a **layered risk management approach** as illustrated in the below figure (IPCC Figure 17.3). In line with this approach, the authors stress the potential for risk finance to "help people avoid the impacts of loss events, particularly very rare ones" (ibid).

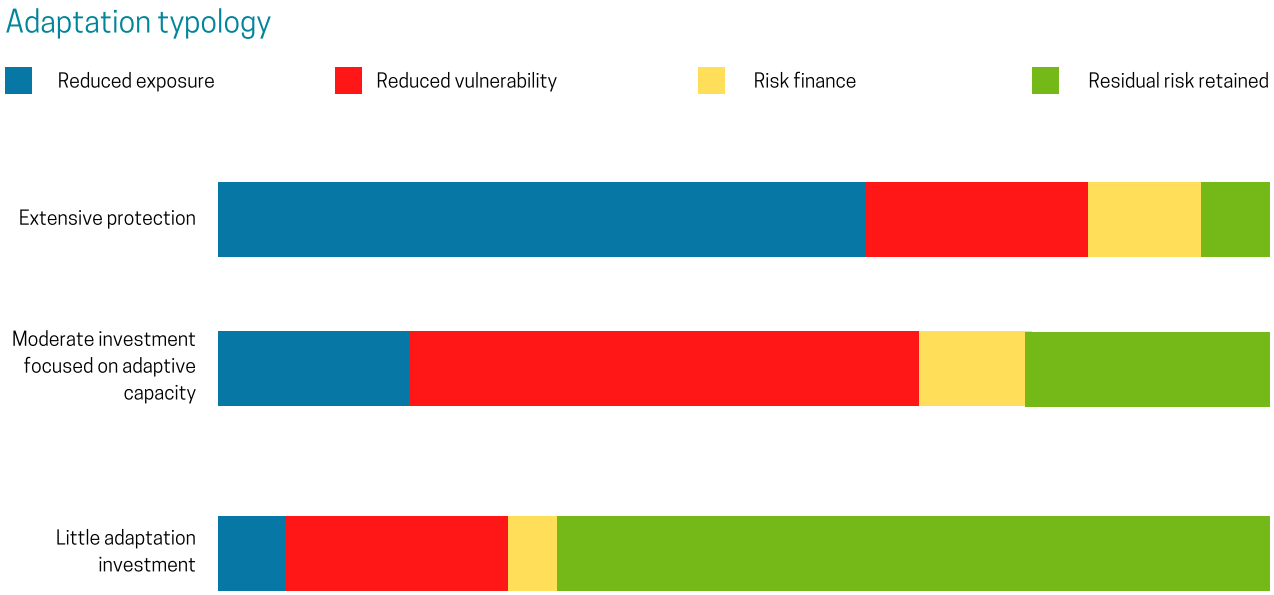


IPCC Figure 17.3 (reproduced): A graphical representation of layered risk management

The report states that "insurance is increasingly accepted as an adaptation option" (ibid). Consequently, **the IPCC recognizes insurance (or, more broadly, CDRFI) as one of the 24 representative adaptation options** to address so-called *representative key risks* to human and socio-ecological systems. These adaptation options are compared regarding a number of dimensions, with some of these comparisons highlighting risks for possible adverse side-effects of insurance options (such as on ecosystems or marginalized groups). The authors assess with *high confidence* that positive outcomes are not guaranteed for insurance-related options. The report hence calls for **safeguards to address possible pitfalls** such as a shift in responsibility (to pay CDRFI premiums) to vulnerable people, or maladaptation and moral hazard concerns. As an example for the latter, the report cites an example in which insured crops were less well adapted to heat stress than non-insured ones.

Addressing some of these concerns, in line with the risk layering framework introduced above, the report cherishes so-called ***integrated approaches*** to risk management, whereby "people simultaneously invest in insurance and adaptations that reduce vulnerability/exposure" (ibid), reducing collective risk through effective combinations of DRR and CDRFI. In addition, CDRFI's potential contribution to ex-ante risk reduction potential and incentives is stressed, recognizing that "**insurance can encourage the quantitative evaluation of climate-related risks and adaptation limits**, and it can incentivize risk reduction by charging lower premiums for less risky situations" (ibid).

Section 17.2.2.2 goes on to explain the global variation in risk management portfolios. As illustrated in the below figure (IPCC figure 17.4), three stylized cases of risk management are described. According to this categorization, the amount of residual (retained, i.e. not reduced nor transferred) risk typically increases with lower incomes and weaker governance structures. Characteristics for each category are described. The authors point out in particular that in countries with little adaptation investment, **vulnerable populations "bear large amounts of residual risk**", such as in Small Islands Developing States (SIDS) or conflict-affected areas.



IPCC Figure 17.4 (reproduced): Illustrative typologies for how risk has been managed

Moreover, still placed in the chapter on decision making options for risk management (Chapter 17), the Cross-chapter box LOSS: Loss and Damage (L&D) assesses the relevance and attention paid to the concepts of risk finance and risk management in the L&D discourse. It acknowledges that "L&D dialogue has strongly focused on risk finance for residual risks, particularly through the donor-supported provision of public insurance systems." (p.32) The cross-chapter box further recognizes that technical assistance has been provided by donors and policymakers for insurance-related support mechanisms such as under the **InsuResilience Global Partnership** (ibid). Similar points are made in the Cross-chapter box FEASIB.3.4.2 Risk spreading and sharing (Chapter 18), which holds that the technological, economic and institutional feasibility of risk spreading and sharing through CDRFI is high to medium depending on context. Feasibility constraints inter alia include socio-economic barriers to insurance uptake. Box 3.4.2 provides a useful **summary of causal mechanisms that make CDRFI a promising adaptation option** (e.g. the shift from ex-post to ex-ante disaster assistance and the signaling effect of risk pricing) as well as potential pitfalls to avoid (e.g. threats of moral hazard, maladaptation and undue shifts in responsibility to pay premiums).

Regional and sector-specific aspects of CDRFI

Beyond the general discussion of risk finance theory and practice just presented, the report provides a more detailed discussion on CDRFI approaches in specific sectors and/or geographies. The following section aims to represent key points of sections with a substantial discussion of CDRFI-related topics. It is non-exhaustive, i.e. insurance and broader CDRFI options are mentioned (often as examples and/or in passing) in further chapters of the report, e.g. in chapter 4 on water or chapter 8 on poverty, livelihoods and sustainable development.

Section 11.3.8.3 in the chapter on **Australia and New Zealand**, for instance, provides a recount of how insurance markets and regulation are responding to climate change impacts in these countries. Section 15.6.3 provides a detailed recount of experiences with CDRFI approaches at both a macro- and micro-level in **Small Island Developing States** in the **Pacific**, **Caribbean**, and other regions. Given persisting challenges with insurance uptake such as limited access due to lower demand in small markets, the section concludes that "insurance cover is a critical question in small islands" (p.48).

Specifically focusing on **Asia**, Section 10.5.5 provides a recount of risk financing approaches, their increasing popularity, and recent technological advances on the continent. It is noteworthy that the chapter recognizes with high agreement, medium evidence that risk financing for risk mitigation brings cost savings and efficiency to overall risk reduction. The section then focuses on **agricultural insurance** in Asia, with a focus on experience with large government programmes and a recount of challenges associated with them, including with regard to **government-subsidized insurance premiums**. The potential of index insurance to overcome bottlenecks with traditional indemnity-based insurance is highlighted. Section 10.5.4.3 then points out remaining knowledge gaps that hinder higher penetration of insurance in Asia. The formation of the **Southeast Asia Disaster Risk Insurance Facility** (SEADRIF) is mentioned as a promising example.

Section 9.8.4 and 9.11.4.1 provide a comparable description of experiences with **agricultural (index) insurance in Africa**. The report holds that countries and communities in the region are "inadequately insured against climate risk" with insurance penetration at less than 2% of GDP (p.135). A number of hindrances to greater insurance uptake such as affordability constraints and a lack of awareness and product diversity are explained. Among these the authors remark a distinct lack of data and models that "hinders insurers' ability to price risk correctly" (ibid). The IPCC authors further remark that public and donor funds play an "outsized" role in sustaining these schemes in the region. Table 9.12 contains a useful overview of insurance opportunities to mitigate climate risk.

Compared to other regional chapters, Chapter 12 (**Central and South America**) provides little detail on CDRFI approaches in the region (see section 12.5.4.2). The regional chapters on **Europe** and **North America** provide a summary of CDRFI responses in mature insurance markets (see inter alia sections 13.2.2.1, 13.6.2.4, 14.7.1.4).

In a similar vein to the discussion of agricultural insurance in the regional chapters, section 5.14.1.3 (in the sectoral chapter on **Food, Fibre, and other Ecosystem Products**) provides a discussion of **insurance as a climate impact risk management tool** – again with a focus on parametric insurance ('index-based agricultural insurance (IBAI))' and its benefits compared to traditional indemnity-based approaches. In line with the call for safeguards introduced above, the section stresses difficulties in reaching the poorest and most marginalized farmers, and concludes that "there is *low agreement and medium evidence* regarding the adaptation potential of derivatives-based insurance products" (p. 142). The authors stress the need for further evidence in this area.

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Focusing specifically on CDRFI as an adaptation tool for **urban settings and infrastructure**, Section 6.3.3.3 distinguishes the feasibility of insurance approaches (specifically flood insurance) in OECD countries (high) from that in LMICs (lower due to access challenges). The section calls for "more integrative approaches" that link insurance provision to adaptation strategies, building standards and land use-planning, and provides examples of successful community-driven collective insurance schemes for low-income urban areas.

Conclusion

In sum, the IPCC AR6 provides a nuanced, balanced picture of CDRFI theory and practice. Its assessment of experiences with the use of CDRFI in different geographies and sectors to date as well as that of CDRFI's future potential holds important lessons to inform the further upscaled penetration and uptake of CDRFI solutions for climate adaptation.

For further references on any of the mentioned topics, the interested reader is referred to the original source.

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Published by
InsuResilience Secretariat

Registered office
InsuResilience Secretariat

As of March 2022