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A New Paradigm in Climate Financing: Operational Insights for the Loss and Damage Fund

Dr. Bapon Fakhruddin

Water Sector Leader, Green Climate Fund (GCF).
Chair, CODATA-TG on FAIR-DRR

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CJ@IDSC.GOV.EG



BAPON FAKHRUDDIN Talks

A New Paradigm in Climate Financing: Operational Insights for the Loss and Damage Fund

The historic establishment of the Loss and Damage Fund (L&DF) at COP28 represents a milestone in securing climate justice for vulnerable nations bearing disproportionate climate impacts. As the L&DF moves towards implementation, this thought piece analyzes priorities and recommendations for an effective framework centered on equity, transparency, and community leadership. Synthesizing insights from climate science, policy analysis, and case studies of existing climate financing models, it proposes actionable next steps for ensuring the L&DF meets on-the-ground needs and empowers those most affected through participatory planning. By examining opportunities as well as political roadblocks, recommendations here offer a comprehensive perspective on operationalizing an empowering paradigm shift in climate aid and financing.

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About the Author

Dr. Bapon Fakhruddin

Water Sector Leader, Green Climate Fund (GCF).

Chair, CODATA-TG on FAIR-DRR

Dr. Fakhruddin is a leading expert on climate resilience. He has over 22 years of experience advising governments and organizations around the world on disaster risk reduction and climate change adaptation. As a hydrometeorologist, he is specialized in climate risk assessment, early warning systems, community resilience, and water security.

He currently leads the Water Sector at the Green Climate Fund. He oversees climate investments in vulnerable countries around the world to support water security and early warning project origination. Previously, he occupied strategic planning and advisory roles within UN agencies and Multilateral Development Banks (MDBs), including UNDRR, WMO and ADB, where he advanced policies, frameworks, and operational multi-hazard early warning systems for enhanced climate risk management.

Dr. Fakhruddin is a steadfast advocate for evidence-based planning and inclusive development. He has led groundbreaking research on forecasting models, vulnerability assessments, and resilience frameworks in over 40 countries. His scholarly work integrates climate science with social dimensions of adaptation, while his on-the-ground exposure allows for practical translation of concepts for communities and policymakers.

Moreover, he is a thought leader in his field. He has worked in international expert committees, such as the International Science Council and Committee on Data of the International Science Council (CODATA), and taken part in national resilience agendas for governments in the Least Developed Countries (LDCs) and Small Island Developing States (SIDS).

Dr. Fakhruddin is an adept communicator. He has built meaningful partnerships with diverse stakeholders, from climate activists to indigenous groups. He is also a certified emergency management trainer and has implemented incident command systems in multiple Asian countries.

With his interdisciplinary knowledge, contextual grasp, and passion for enabling climate justice, Dr. Fakhruddin continues to pioneer solutions that save lives and livelihoods from the aggravating disaster risks.

Abstract

The historic establishment of the Loss and Damage Fund (L&DF) at COP28 represents a milestone in securing climate justice for vulnerable nations bearing disproportionate climate impacts. As the L&DF moves towards implementation, this thought piece analyzes priorities and recommendations for an effective framework centered on equity, transparency, and community leadership. Synthesizing insights from climate science, policy analysis, and case studies of existing climate financing models, it proposes actionable next steps for ensuring the L&DF meets on-the-ground needs and empowers those most affected through participatory planning. By examining opportunities as well as political roadblocks, recommendations here offer a comprehensive perspective on operationalizing an empowering paradigm shift in climate aid and financing.

Context of the Loss and Damage Fund

The establishment of the Loss and Damage Fund represents a historic achievement in the fight for climate justice. Approved at the 2022 UN Climate Change Conference (COP27) in Sharm El-Sheikh, the fund became formally operationalized through a landmark consensus agreement on the opening day of COP28 in Dubai¹. The fund specifically addresses irreversible economic and non-economic loss and damage resulting from climate change impacts like extreme weather events and slow-onset processes. They represent consequences vulnerable developing nations are unable to adapt to or withstand on their own².

The fund will be probably hosted on an interim basis by the World Bank (i.e. once the conditions proposed by the transitional committee, adopted at COP28, are decided upon), with the help of interim secretariat (UNFCCC, GCF and UNDP)³. The fund diverse funding streams create space for businesses to establish on-the-ground projects in developing regions⁴.

The total amount pledged for the loss and damage fund at COP28 is just over USD 700 million. However, this amount falls far short of what is needed to address the loss and damage faced by developing countries, estimated to be over USD 400 billion annually⁵. Developing countries have been calling for at least USD 100 billion per year to be allocated to the fund⁶. The pledged amount of USD 700 million represents less than 1% of the developing countries' expectations and only 0.2% of the actual needs⁷. It is important to note that using grants to support loss and damage should be a major priority⁸. The world also needs creative financial instruments and private sector collaborations. However, a clear definition for loss and damage, appropriate funding volumes across adaptation and mitigation efforts, fair distribution frameworks, and oversight mechanisms is missing. Developed and developing countries alike harbor mistrust, fearing funds could offset rather than supplement existing climate financing goals⁹. Still, despite these political and practical roadblocks, the fund represents an essential recognition of unavoidable climate impacts and offers new hope for vulnerable regions¹⁰. Constructive negotiations must continue to realize its potential in driving resilience, justice, and a redemptive shift towards empowering frontline communities most affected.¹¹



Recommendations

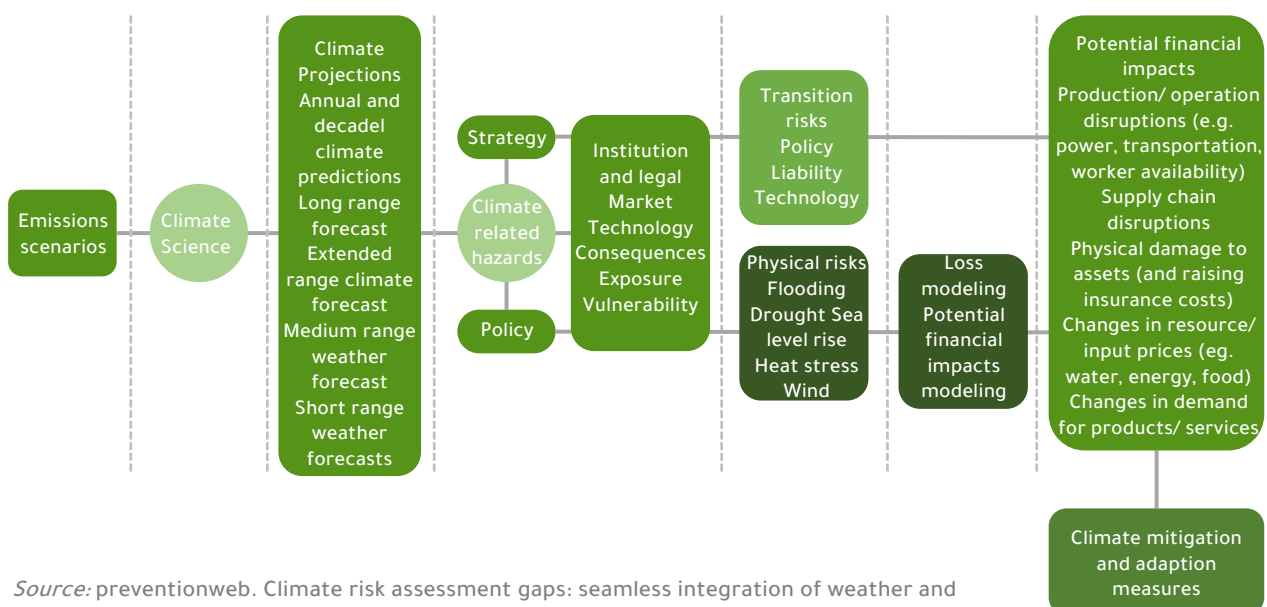
Realizing the fund's promise relies on inclusive, empowering frameworks tailored to on-the-ground realities. The Fund Board will convene its meetings this year to discuss several key items, including eligibility criteria, policies/procedures, and standards, as noted in the previous decisions. If governance genuinely elevates marginalized voices and local resilience priorities, resources can seed community-led regeneration rather than top-down external intervention. Creative financial instruments and private sector collaborations can further augment public commitments over time if social responsibility guides investments. The following are recommendations for a new fund to address loss and damage resulting from climate change:

- **Technical Assistance and Coherence:** The Santiago Network's role is pivotal in enhancing the technical capacity of developing countries. The Santiago Network hosted by UNDRR and United Nations Office for Project Services (UNOPS), which was adopted at COP28, is essential for providing technical assistance and building capacity in developing countries. It ensures the availability of data and risk information to quantify loss and damage due to climate change. This network can help countries develop robust data collection, monitoring, and reporting frameworks that align with global standards, which is crucial for evidence-based policymaking and climate risk funding proposals. The highly systematic archives and collections of Post-Disaster Needs Assessment (PDNA) data and other database like Sendai Framework Monitor are critical to ensure L&D data accounting. The complementarity and coherence potential of the Santiago Network facing the loss and damage fund is also critical in this perspective.
- **Knowledge Exchange and Data Collaboration:** The exchange of knowledge and best practices across regions is crucial. The success of platforms like FAIR Data for Disaster Risk Reduction (FAIR-DRR), DRR), Integrated Research on Disaster Risk (IRDR), Humanitarian Data Exchange (HDX), Climate Data Store (CDS), Global Earth Observation System of Systems (GEOSS), Joint Research Centre (JRC), and other similar initiatives, which have provided guidance on loss data accounting and the FAIR (findable, accessible, interoperable, reuse) data standard, improved early warning systems and facilitated similar exchanges to improve loss data assessment, collection, and use.

- Investment in Climate Data Infrastructure:** Investing in climate data infrastructure is vital for robust climate action. Still countries are having difficulties securing a dynamic risk assessment platform using hazard, exposure, and vulnerability database, although several global climate data platforms are available (e.g. www.climateinfo.org). However, none of those can meet countries' demands or provide L&D information or need-based climate information so countries can make better informed decisions and understand the incremental climate risk. Nevertheless, L&DF may not be poised to finance this kind of activities. This is something existing financial actors can exercise their leadership in supporting. Seamless integration of climate data to understand impacts would enable countries to better understand and calculate L&D data (Figure 1). At the same time, risk-based decision-making culture should be reflected into their National Adaptation Plan (NAP), which would ensure access to finance and robust loss data collection system.
- Inclusive Partnerships for Data Systems:** Inclusive partnerships for data systems are critical for effective collection, analysis, and use of loss and damage data. Partnerships within cross-domains, like disaster risk reduction, climate change adaptation, and others, allow the development of interoperable data infrastructure. This allows linking diverse datasets to enrich analysis on complex climate risks and losses. The Santiago Network should encourage such partnerships that consider local contexts and equity. Multi-stakeholder collaboration enables knowledge exchange and localized training in data collection, analytics, communication models. Investing in data capabilities empowers ethical evidence-based decision-making.

Figure 1

Seamless integration of data to understand climate risk, loss modeling, and potential financial impacts to calculate L&D



Source: preventionweb. Climate risk assessment gaps: seamless integration of weather and climate information for community resilience. October 27, 2021.

- **Unified Technical Guidance:** Coordinated efforts are essential for effective data standardization and interoperability. Unified technical guidance for disaster and climate loss data is provided through international frameworks and initiatives such as the Sendai Framework for Disaster Risk Reduction (SFDRR) and the Sustainable Development Goals (SDGs) 2030, which sets global targets and priorities; the IPCC's methodologies for climate impact assessment; the WMO's standards for meteorological data; the GFCS's guidance on climate services; disaster losses and damages tracking system (i.e. past DesInventar); CRED's principles for data sharing; the INFORM Risk Index's global risk assessment; and the Early Warnings for All (EWS4All) initiatives by Secretary in vulnerable nations. Together, these resources ensure standardized, reliable, and interoperable data collection and analysis to inform decision-making in disaster risk reduction and climate adaptation efforts.



- **Science-Driven and Community-Informed Fund Allocation:** An integrated approach combining scientific analysis and local knowledge is optimal for directing the loss and damage fund allocations precisely and relevantly. Scientific insights, derived from sophisticated modeling, forecasting, and data analytics, provide an empirical foundation to identify broadly vulnerable areas and populations, predict future climate impacts, and model the effectiveness of interventions. Meanwhile, inclusive community perspectives bring invaluable context on specific lived challenges and culturally appropriate solutions grounded in traditional knowledge and practices honed locally over generations. Together, the synergistic knowledge systems enhance sophistication and relevance - whether via high-tech early warning paired with indigenous water management or resilience measures backed by both quantitative and qualitative evidence. By allocating resources informed by both broad climatic patterns and hyperlocal nuances, the dual approach allows fund disbursement to be strategically targeted for those most affected while ensuring cultural resonance and sustainability.
- **Empowerment of Vulnerable Communities:** Empowering vulnerable communities is pivotal across disaster and climate data value chains - from the inclusive data collection to context-aware analysis of national climate action for driving localized action. Community co-design of methodologies grounded in traditional knowledge improves data quality and relevance. Hands-on engagement builds localized capabilities for evidence-based decision-making. This transforms narratives around loss and damage by shifting discourse from passive victimhood to active regeneration led by those with the deepest wisdom of place. Ultimately, data should serve people, but not the reverse. Communities are best positioned to collect, interpret, and apply data in ways that uplift their needs and priorities. The COP28 decision invites active observers, including youth, women, Indigenous Peoples, and environmental non-governmental organizations, to participate in its meetings and related proceedings of the loss and damage fund. A clear strategy may be needed to activate this mechanism and empower the vulnerable and affected communities.



- **Good Governance for Accountability:** Good governance and accountability are essential for ethical, effective loss and damage data systems. Transparent data collection and reporting enables tracking of climate impacts and adaptation gaps critical for directing finance flows. Trusted oversight builds credibility among partners - whether residents providing hyperlocal observations or funders dispatching resources. The Adaptation Fund, the Green Climate Fund (GCF), and the Global Environment Facility (GEF) demonstrate robust accountability through independent evaluation, consistent monitoring, and clear feedback channels. This approach ensures intended communities actually benefit from program investments. Similarly, consistent data coupled with inclusive governance can strengthen recovery and resilience on the ground. Standardized loss data empowers localized planning while equitable representation builds responsive decision-making. Indeed, good data governance gives vulnerable communities a seat at the table to articulate needs and evaluate responses. In other words, reliable data and participatory governance mutually reinforce evidence-based, socially-just climate action - driving empowerment through transparency.
- **Innovative Financing for Resilience:** Innovative finance is imperative to bolster loss and damage data systems lacking traditional funding and crucial for driving climate resilience. Mechanisms like parametric insurance pay out automatically based on climate triggers, swiftly channeling resources grounded in robust weather data. Mongolia's index-based livestock program demonstrates such data-enabled finance protecting herders against intensifying climate shocks.¹² Similarly, resilience bonds connecting investors to vulnerability-focused projects can integrate climate analytics for targeting high-risk regions. Debt-for-climate swaps can forgive debt in exchange for climate data infrastructure investments. Beyond volume, innovative instruments inject efficiency into funding flows informed by evidence. Climate-related crowdfunding platforms and blockchain-enabled climate funds also warrant exploration for ethical mobilization that elevates community voices. Strengthening loss and damage data systems requires fit-for-purpose finance solutions responsive to on-ground realities. Blending public and private capital through innovative models grounded in climate data science unlocks targeted, swift support where traditional funding cannot reach.



▪ **Private Sector Engagement for Climate Solutions:** The private sector is well-positioned to promote loss and damage data systems through financing, technical capacities, and market linkages - if engaged constructively. Initiatives like the African Risk Capacity demonstrate the potential of advanced risk modeling, parametric insurance, and climate analytics marshalled by private expertise and assets. Such capabilities could be directed to enhancing vulnerability data monitoring and climate risk quantification. Private investment can also fund crucial data infrastructure from IoT sensors to satellites tracking climate extremes. Fostering regulated data markets helps meet rising demand from policymakers and financial institutions as climate risk reporting expands. However, pursuit of commercial opportunities cannot compromise public good. Robust governance is essential to uphold ethical standards, data transparency, and accessibility. Multi-stakeholder partnerships leveraging complementary strengths across public oversight and private innovation can responsibly amplify loss and damage data where needs are greatest. The outcomes can simultaneously advance climate resilience and social responsibility.

Conclusion

The successful implementation of the Loss and Damage Fund hinges on its ability to foster genuine climate solidarity, effectively bridging the gap between international promises and local empowerment. Realizing the fund's potential relies on equitable and empowering governance that opts for localized priorities instead of one-size-fits-all external intervention. Impact at scale further depends on transparency, accountability, and finance mobilization through layered public and private mechanisms suited to complex realities across diverse global regions. Significant political headwinds persist, but the L&DF can shift discourse towards structural solutions for intolerable loss and damage to serve those most affected. The L&DF's success is intrinsically linked to its ability to support countries in developing their own resilient loss and damage assessment mechanisms. By emphasizing this critical aspect in our approach, we can ensure that the Loss and Damage Fund not only addresses immediate needs but also lays the groundwork for climate resilience. If designed for transformation, it will redeem international promises and raise hope by empowering communities to choose their own regenerative futures.



Chair, CODATA-TG on FAIR-DRR

Disclaimer: The article does not reflect the official views of the Green Climate Fund (GCF). The views and opinions expressed in this article are those of the author and do not necessarily reflect anything on any organization. This article contains only the personal opinions and perspectives of the author.

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The Egyptian Cabinet
Information and Decision Support Center

Government District - New Administrative Capital, Egypt
Postal Code:11582 | P.O. Box: 191 Magless El-Sha'ab
info@idsc.gov.eg | Tel: (202) 2792-9292 | Fax: (202) 2792-9222

