

Falling through the gaps

How global failures to address the climate crisis are leading to **increased losses and damages**

Evidence from Bangladesh, Indonesia, and Nepal



Acknowledgements:

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Executive summary

Global failures to mitigate and adapt to the climate crisis are causing massive losses and costly damages to the lives, livelihoods, and futures of communities around the world.¹

This is not just a future problem: in 2022, for example, Pakistan suffered a heatwave that pushed the limits of human liveability, peaking at 49.5°C in May, followed by catastrophic flooding that damaged or destroyed more than a million homes and countless acres of crops, causing more than US\$30 billion in economic losses and over \$16 billion in reconstruction needs (The World Bank, 2022).

It is becoming all too evident that the climate crisis is causing human, cultural, economic, and ecological devastation. Much of this is avoidable; some is irreversible. While much more evidence is needed at the national, subnational, and community level to fully understand the scale and scope of losses and damages, it is urgent that we mobilize concrete, practical action and formulate effective policies in the face of rising climate-related risks and impacts.

Global efforts to **avert and minimize** losses and damages, including through mitigation and adaptation, have been woefully inadequate. Efforts to **address** resultant losses and damages are highly insufficient, and national and international humanitarian response systems are already overstretched and underfunded. As a result, a vast proportion of losses and damages is borne by vulnerable households and communities; these same communities have the least capacity to cope. There is a moral imperative to act in solidarity with those who are suffering now and to develop an approach that will protect generations to come.

The international community must scale up action and urgently establish and resource a comprehensive approach to averting, minimizing, and addressing losses and damages. At COP27 in Sharm el-Sheikh, historic steps were taken when negotiators agreed not only to include 'Loss and Damage' as a formal agenda item but also to establish new funding arrangements, including a dedicated Loss and Damage Fund, to assist particularly vulnerable developing countries in dealing with the adverse effects of climate change. A transitional committee will be established to make recommendations for operationalizing the fund for consideration and adoption at COP28, whilst ensuring coordination and complementarity with existing funding arrangements inside and outside the United Nations Framework Convention on Climate Change (UNFCCC).

¹ The IPCC (2022b) defines 'losses and damages' in lower case as (observed) impacts and (projected) risks from climate change. The capitalized 'Loss and Damage' refers to political debates and activities under the UNFCCC following the creation of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts (Loss and Damage Mechanism, or WIM) in 2013. The growing needs associated with losses and damages have also been recognized in the Sharm el-Sheikh Implementation Plan, agreed at COP27 (see <https://unfccc.int/documents/624444>).

Parties also agreed on the mechanisms to operationalize the Santiago Network on Loss and Damage (SNLD).² The SNLD aims to provide technical assistance to developing countries and local communities to avert, minimize, and address losses and damages. However, questions remain around how much finance will be made available for the SNLD and how it will deliver technical assistance. As with the Loss and Damage Fund, significant efforts need to be made to ensure its operationalization and its ability to effectively channel resources to where they are most needed, and to close the gaps within the current funding landscape (Hillier et al., 2022).

Besides furthering developments on Loss and Damage, COP27 served as a reminder to continue focusing on mitigation and adaptation in order to close the gaps that are leading to climate disasters of the kind experienced by Pakistan last year. Real progress on Loss and Damage can only be established when incorporating the full spectrum of averting, minimizing, and addressing the impacts of climate change.



A local response team works to prevent floodwater entering settlements bordering the Triyuga River, July 2020. Nepal © Red Cross Society

² See <https://unfccc.int/santiago-network>

Evidence from Bangladesh, Indonesia, and Nepal

To better understand the realities and needs of frontline communities, the Zurich Flood Resilience Alliance explored flooding impacts and risks in Bangladesh, Indonesia, and Nepal.

Case studies on losses and damages in these countries are summarized in this report. They build upon empirical observations, including post-event forensic analysis (e.g. the Post-Event Review Capability (PERC)),³ resilience assessments (e.g. the Flood Resilience Measurement for Communities (FRMC))⁴ (see Box 1), relevant global and national impact and risk databases, and reflections of key actors and communities themselves.

For each case study, we sought to answer the following sets of key questions:

- What are the losses and damages associated with climate change?
- Where are these not being measured and why are they poorly reported?
- What is being done to manage these risks through adaptation (including disaster risk reduction (DRR))?
- How effective are these efforts and what are the challenges?
- Where are these impacts not being managed?
- What is being done by whom to avert, minimize, and address the losses and damages experienced by communities?
- And, critically, what are the gaps?

In all three countries, flooding and associated losses and damages are already increasing, whether from coastal, riverine, and pluvial floods in Bangladesh; glacial lake outbursts and flash floods in Nepal; or storm surges in coastal areas of Indonesia.



Gathering data in Vietnam using the FRMC tool. © Ho Thi Hoa, Plan International

BOX 1: Strengthening community resilience through innovative, evidence-based tools from the Zurich Flood Resilience Alliance

Flood Resilience Measurement for Communities (FRMC): the FRMC tool allows users to generate evidence about the ways in which a given area or community is already resilient to floods and provides guidance to develop that resilience further. So far, it has been applied to more than 300 communities in some 30 countries.

Post-Event Review Capability (PERC): following large floods, the PERC tool reviews flood resilience, flood risk management, and post-flood interventions. It summarizes lessons learned, opportunities for improvements, and recommendations for future flood resilience measures.

³ See <https://floodresilience.net/perc/>

⁴ See <https://floodresilience.net/frmc>

Vulnerable countries and households are shouldering the economic costs of climate change

The economic costs of climate change are alarming: by 2050, economic losses in Nepal and Bangladesh are estimated to be up to 2.2% and 2.0% of annual GDP, respectively; by 2100, economic losses in Indonesia could be 2.5–7% of GDP.⁵ While some of these costs are covered by international assistance or by local and national authorities, the lion's share is borne by affected households.

For example, in 2015, rural households in Bangladesh spent an estimated \$2 billion on climate and disaster risk management – double what was spent by the government and more than 12 times what was received from multilateral institutions (Eskander and Steele, 2019). To do this, households living in poverty had to divert money away from basic needs, such as food, education, and health, to repair damage to their homes, replace animals or destroyed crops, and implement disaster risk management measures, such as raising their houses above flood levels. These costs hit female-headed households much harder – while absolute amounts spent were similar to male-headed households, as a percentage of income they spent three times more.

Climate change is undermining human well-being and planetary health

Non-economic losses and damages include human pain, suffering, and casualties; loss of cultural heritage and social and cultural identity; and loss of biodiversity and damage to natural ecosystems. Our research found that:

- in Bangladesh, in the aftermath of floods, there is a rise in child labour and the marriage of underage girls as households are unable to afford education for their children;
- in Indonesia, floods are causing coastal erosion, damage to coral reefs, migration of fish stocks, and biodiversity loss – all of which can have irreversible and damaging effects far beyond Indonesia's borders;
- in Nepal, after the 2014 floods, people reported higher levels of illness and effects on children's growth and development, as well as high levels of stress and anxiety, leading to higher rates of depression and increased risk of suicide.

⁵ Estimates are taken from the Asian Development Bank (Nepal), IPCC (Bangladesh), and the World Bank (Indonesia).

Affected countries cannot avert, minimize, and address losses and damages alone

The governments of Bangladesh, Indonesia, and Nepal are attempting to avert, minimize, and address losses and damages in various ways. For example, Nepal recently approved a national framework on climate change-related losses and damages; Bangladesh is discussing establishing a national Loss and Damage mechanism; and Indonesia is setting up institutional architecture for observing, reporting, and responding to climate change-related disasters. All three countries are already dealing with the impacts of climate-related losses and damages, responding to floods, heatwaves, and more. There is some international assistance available, but not enough to meet even current needs.⁶

Countries are facing escalating challenges, particularly a lack of resources to cover the full range of activities needed to keep populations and ecosystems safe, and to respond when losses and damages do take place. These challenges include reaching the local level; averting, minimizing, and addressing the losses and damages experienced by households and communities; and ensuring that truly no one is left behind. Thus, while protection schemes do exist in Bangladesh, Indonesia, and Nepal, social protection programmes are not shock-responsive. Insurance is often inaccessible to those most affected by climate change-related disasters, and it is rarely affordable: for example, only 0.16% of the Bangladeshi population is covered by non-life insurance (LightCastle Analytics Wing, 2021).

Given these many challenges, both financial resources and additional capacity are needed for national authorities to establish and implement effective policies and take the necessary action to avert, minimize, and address losses and damages.



A storm-damaged home in Pekalongan, Indonesia. © Ezra Millstein, Mercy Corps

⁶ For example, the UN Pakistan floods response plan is less than 40% funded: <https://fts.unocha.org/appeals/1108/summary>



A flooded primary school in Thiès, Senegal. © Practical Action

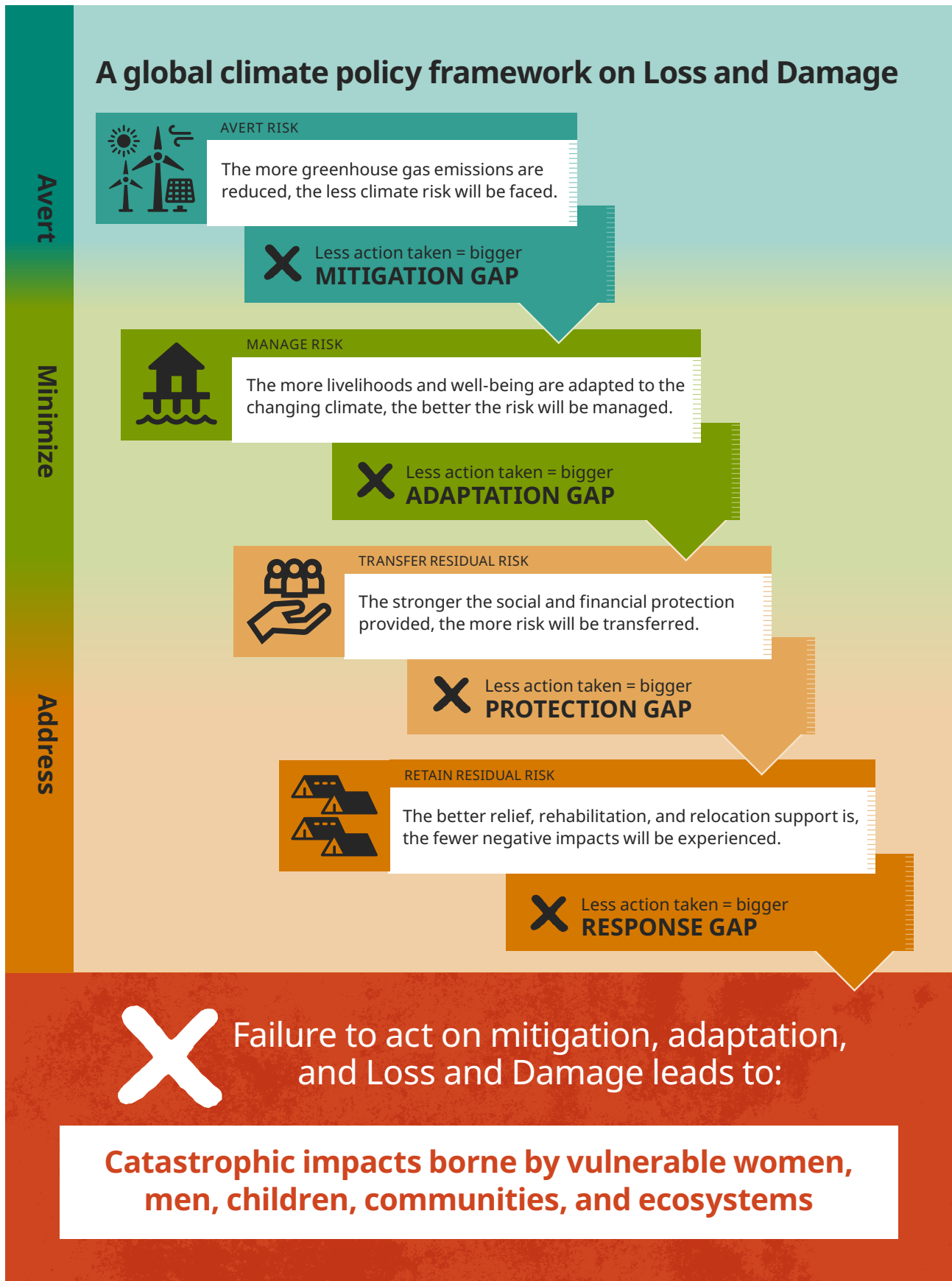
Mind the gaps: adaptation, protection, and response

How did we get to a situation where climate change is causing damage, destroying homes, infrastructure, agriculture, biodiversity, and ecosystems, and leading to the loss of lives, livelihoods, dignity, and hope?

Insufficient global action on mitigation has led to a certain amount of global warming being ‘baked into’ the climate system, making it impossible to entirely avert the risks and impacts being observed today. Consequently, the global community must now also focus on efforts to minimize climate-related impacts through adaptation and disaster risk management. Yet inadequate funding and ineffective policies mean that adaptation in climate-vulnerable developing countries is often ‘fragmented, small in scale, [and] designed to respond to current impacts and near-term risks’ (IPCC, 2022f: 20). As such, it is ill-equipped to comprehensively minimize and address the consequences of crises today and in the future. This in turn creates a significant and growing climate **adaptation gap** (see Figure 1). Adaptation costs in developing countries could reach an annual figure of \$300 billion in 2030, yet international public finance amounts to barely 10% of this.

Insufficiently effective adaptation and the fact that some physical processes associated with the climate crisis – such as rising sea levels – are now unavoidable have led to countries and communities around the world experiencing large-scale losses and damages. Efforts to minimize and address these failures through, for example, financial and social protection, and through the provision of assistance and support for rehabilitation, are falling short due to inadequate investment, resulting in a **protection gap** and **response gap**.

FIGURE 1: A global climate policy framework on Loss and Damage⁷



⁷ This diagram summarizes the Loss and Damage policy framework, impacts, and gaps. It is simplified to increase clarity, recognizing that it does not capture the full nuance of the negotiations.

Data matters: a key ingredient for better policy design

All country case studies emphasize the need for better and more comprehensive data about losses and damages in order to be able to design more effective policies.

First, policymakers need better measurement tools so that they can understand the full scope of losses and damages, both economic and non-economic, and estimate the financial requirements to avert, minimize, and address them, reflecting national-, regional-, and local-level community needs. To enhance the comparability of estimates, these tools should ideally be systematized globally.

Second, as not all losses and damages can be easily quantified, policymakers need a better understanding of the impacts of hazards on people's lives and on the well-being of communities and their environments. Local communities, indigenous and local knowledge, narratives of lived experience, and qualitative insights on where community well-being is being disrupted are key to understanding these non-economic impacts ex post and ex ante.

Third, policymakers need a better understanding of how community resilience can be improved. More data is needed to understand the causes and consequences of climate risks and impacts, as well as the resilience of communities to overcome these impacts, based on local understanding and knowledge. The FRMC and PERC tools could help fill these information gaps. For example, in Nepal, the FRMC tool has been used to identify locally applicable good practices to address community resilience priorities. As a result, Practical Action and Mercy Corps flood resilience practices, such as bio-dikes, raised granaries, and safe shelters, are being implemented and financed by local government.



The resilience-building interventions carried out by these community volunteers in Jordan were determined by collecting and studying data using the FRMC. © Mercy Corps



Flooded streets in Nangapur, Nepal. © Practical Action

Policy recommendations⁸



Cover the adaptation gap: massive investments are needed now to prevent and manage avoidable losses and damages for the most vulnerable people. Adaptation investments reduce the irreversible harm that otherwise cannot be recovered through risk transfer or response mechanisms.

- At a minimum, developed nations should make good on the commitment to provide \$100 billion of climate finance per year, with 50% for adaptation, and a focus on grants, not loans.
- Adaptation investment needs to reach the local level and be locally led in order to enhance the resilience of climate-vulnerable communities.
- Losses and Damages should be included in the Global Stocktake⁹ as evidence of the limits to adaptation and the failure to mitigate.



Close the protection gap: major investments are needed in all climate-vulnerable countries to increase protection and boost adaptation to unavoidable risk.

- The lessons from shock-responsive social protection, weather-indexed insurance, and similar schemes should be assimilated and used by national and international agencies to create or strengthen comprehensive and shock-responsive social protection programmes and, where appropriate, well-designed insurance schemes.
- Support for comprehensive protection schemes should be provided through global climate funds.

⁸ These policy recommendations were updated in December 2022 to reflect the outcomes of COP27, compared to the 'Policy Brief on Losses and Damages' published by the Alliance in October 2022 (see <https://floodresilience.net/resources/item/closing-the-gaps-a-framework-for-understanding-policies-and-actions-to-address-losses-and-damages>).

⁹ The Global Stocktake is a process for taking stock of the implementation of the 2015 Paris Agreement, with the aim to assess the world's collective progress towards achieving implementation and the agreement's long-term goals.



Address the response gap: new approaches are urgently required, including the establishment and operationalization of the Loss and Damage Fund, to ensure that the most vulnerable women, men, and children do not suffer the costs of the climate crisis where the means to adaptation are exhausted.

- New and additional finance for addressing losses and damages, such as financial and social protection, relief, and rehabilitation, alongside effective tracking and accountability mechanisms should be generated urgently.
- The Transitional Committee, the Glasgow Dialogue,¹⁰ and other related processes should advance effective tracking and accountability mechanisms for Loss and Damage funding, ensuring coordination and complementarity between new and existing funding arrangements. This needs to go together with the development of harmonized and comprehensive ways to assess losses and damages ex post and ex ante.
- Loss and Damage should be included in discussions on the New Collective Quantified Goal¹¹ in addition to mitigation and adaptation finance.



Enhance policymaking and implementation capacity: systems need to be strengthened at all levels so that increased funding can be delivered effectively.

- Vulnerable countries should establish comprehensive and effective national and subnational policies, institutional frameworks, strategies, mechanisms, and programmes that support adaptation and avert, minimize, and address losses and damages in a way that is holistic rather than incremental, focuses on vulnerable locations and ecosystems, and meets the needs of the most vulnerable people and communities.
- The SNLD needs to become fully operationalized and needs to be underpinned by sustainable funding in order to provide the extensive technical assistance to climate-vulnerable countries and communities that is required.

¹⁰ See <https://unfccc.int/event/glasgow-dialogue>

¹¹ The 2015 Paris Agreement stipulates setting a New Collective Quantified Goal for Climate Finance prior to 2025. This goal is to be built on the commitment to provide \$100 billion per year by 2030, and must consider the needs and priorities of developing countries.



More and better data: investment is required to build evidence on the scope of risks and impacts – economic, human, and ecological – and on the effectiveness of the policies and programmes designed to minimize and address them.

- National agencies for disaster risk management, climate adaptation, social protection, and so on need to be helped to coordinate better and to share data and tools, with national Loss and Damage contact points established across sectoral mandates.
- More data and evidence are needed, developed in collaboration with local communities, to better prepare communities against climate change-related hazards.



Scale up successful locally led response mechanisms

- Global and national funds should finance the expansion of measures to avert, minimize, and address losses and damages that have proven to be effective, are locally led, and meet the specific needs of the communities they support.
- The work of the Transitional Committee on Loss and Damage should consider how locally led approaches could be scaled up in order to meet the specific needs of communities experiencing loss and damage.



The Zurich Flood Resilience Alliance is a multi-sectoral partnership which brings together community programmes, new research, shared knowledge, and evidence-based influencing to build community flood resilience in developed and developing countries.

We help people measure their resilience to floods and identify appropriate solutions before disaster strikes. Our vision is that floods should have no negative impact on people's ability to thrive.

To achieve this, we are working to increase funding for flood resilience; strengthen global, national, and subnational policies; and improve flood resilience practice.

Find out more: www.floodresilience.net



Rehana, a Local Resilience Agent in Bangladesh, uses an app-based alert system to warn community members about flood events. © Practical Action



Residents of Chosica, Peru address the damage caused by flash floods in 2015. © Practical Action



For more information
write to info@floodresilience.net
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