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What the data tells us – and doesn’t tell us – about the costs of climate change in the Sahel and Horn of Africa

Analysing the impacts of climate change in fragile countries is difficult, but it is possible – and it should not be an excuse for inaction.

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Working in a changing climate Burkina Faso Chad Ethiopia Kenya Mali Mauritania Niger Nigeria Somalia South Sudan Sudan Uganda

The Loss and Damage Fund board meets this week. Despite many uncertainties – loss and damage is not addressed in the new financing goal decided at COP29, and questions about its funding will likely dominate the upcoming meeting – the news that the Fund will start distributing money from 2025 gives a clear timeline.

Our report, **Bearing the Burden**, highlights the urgency with which funding to address loss and damage is needed. The report shares new initial estimates of the losses and damages that could be attributable to climate change across 18 countries in the Sahel and Horn of Africa regions. The findings make for sobering reading. We estimate that climate change contributed to 12,000 deaths, affected nearly 149 million people, and cost $11.5 billion in crops and livestock losses that were associated with droughts and floods between 2000 and 2022. If the world warms to 2°C, these figures will continue to climb: by 2050 the total price tag for crop and livestock damages and lives lost from droughts and floods that could be attributable to climate change may reach $160 billion in the region.

Even more sobering is the fact that these statistics are likely a vast underestimate – given gaps in data collection which are particularly pronounced in fragile and conflict affected situations, as well as the dearth of data on indirect impacts, non-economic loss and damage, and loss and damage from slow-onset processes. The data gaps and biases with which we were confronted in the research process are by no means unique, but they do shine a light on some of the challenges the Loss and Damage Fund must face.

Missing pieces

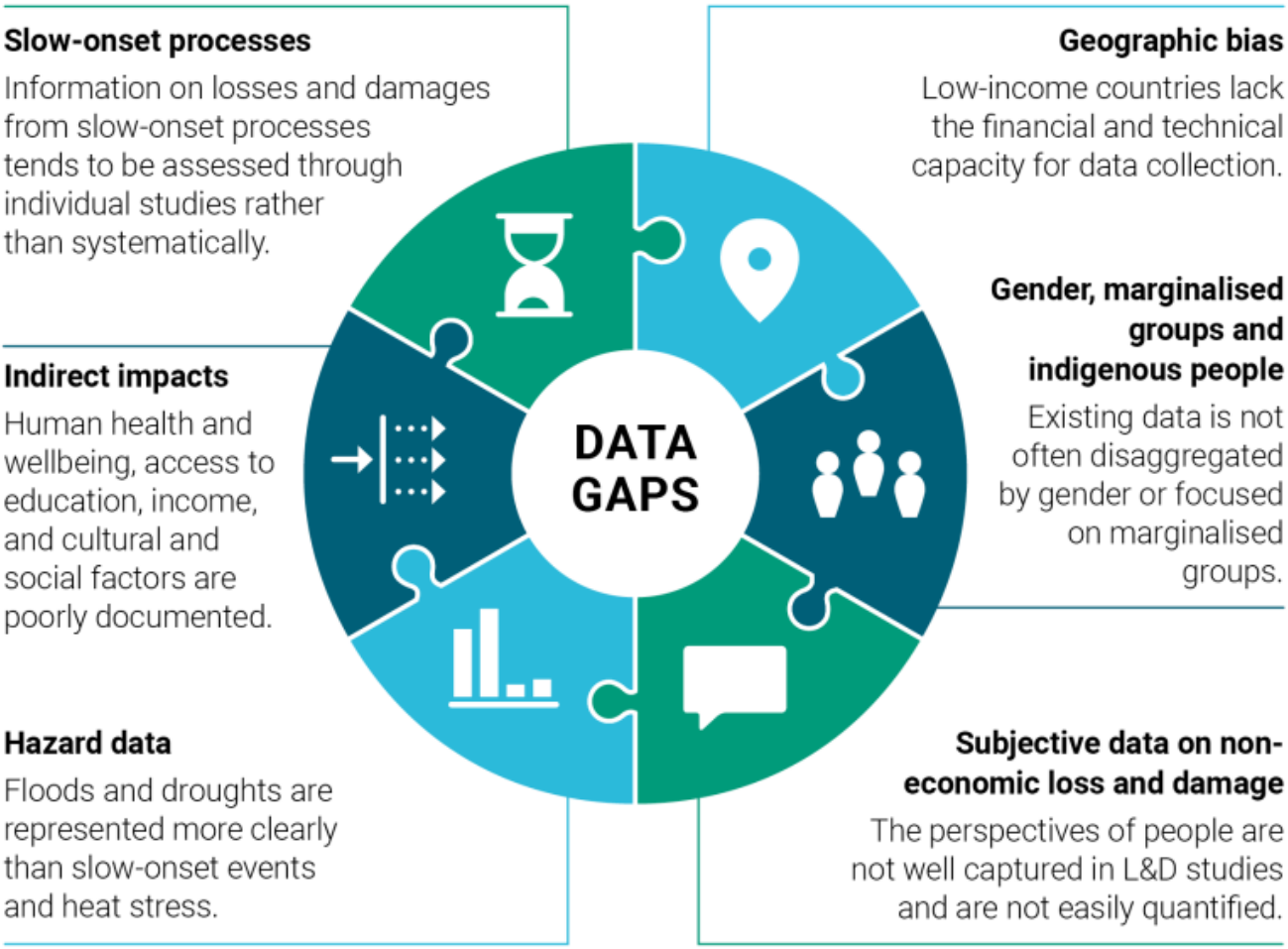
Systems for collecting data – on extreme weather events, economic impacts and more – are often inadequate or worse, non-existent, particularly in fragile and conflict-affected contexts, where war, insecurity, and displacement can make reliable and long-term data

collection near-impossible.

Our research experience bore this out. When investigating losses and damages in the agriculture and livestock sectors in the Sahel and Horn of Africa, we often found we lacked quality data: on livestock losses, livestock disease, crop loss, income loss, human health and more. The data we could find was not always organised around specific hazard events – and when it was, impacts for certain hazards, such as drought and heat stress, tended to be underreported. Systematic data on losses and damages from slow-onset processes, such as rising temperatures, desertification, water salination and biodiversity loss, was almost entirely lacking.

Gathering information about indirect or non-economic losses and damages – such as the death of a close loved one in a flood, the loss of a home due to involuntary migration, or the damage to heritage as sea-level rise – was even more difficult. In particular, we found that studies that include the perspectives of the people experiencing losses are extremely rare; yet, the value of non-economic losses and damages are subjective to the people that experience them and cannot be readily assessed by outsiders. All of this makes it very difficult to estimate the non-economic losses and damages from climate change.

With such extensive gaps, it is no wonder that further unpacking the impacts of climate change on women, girls, and elderly and marginalised groups was even more of a challenge. We know, for example, that losses and damages are not weighted equally, with issues such as gender-based violence that occurs during climate-driven displacement – but data is scant, often due to social pressures and limited avenues for reporting violence.



Some of the major gaps in loss and damage data - published in the main report.

Credit Nur et al. 2024.

Embracing uncertainty

Given the scale of loss and damage that has already materialised, one of the most important conclusions from our research is that data gaps should not present an obstacle to allocating urgently needed finance for addressing loss and damage from climate change. After all, if loss and damage finance were to be directed only towards places with comprehensive quantitative data of climate-attributable loss and damage, it would be given primarily to wealthier countries that have more complete impact data and greater investment in climate attribution research.

Acknowledging this challenge, the Loss and Damage Fund's transitional committee has already determined that allocation decisions should rely on "the best available data and information from entities such as the IPCC and/or pertinent knowledge from Indigenous Peoples and vulnerable communities on [...] loss and damage, recognising that such data, information, and knowledge may be limited for specific regions and countries."

One way to improve our understanding of climate-attributable losses and damages in difficult environments is to expand beyond the current standard data collection and assessment methodologies. For example, post-disaster needs assessments – which largely focus on crop losses, infrastructure damage, and deaths or injury from hazards – can be (and in some cases already are) broadened to incorporate non-economic losses, for instance by drawing on participatory data collection approaches. In the absence of more comprehensive systematic loss and damage data collection and attribution studies, such approaches – particularly those that include perceptions from affected people about the importance of various environmental and socioeconomic factors in the loss and damage they experience – would be a useful substitute.

Investment in data collection is needed, to close existing gaps in national and international disaster impact databases as well as broaden them to cover 'under-represented' types of loss and damage – but as our analysis shows, we cannot wait to allocate funding until comprehensive data becomes available. Many of the world's poorest people are already bearing the burden of climate impacts.

A man walks through the flood waters in Beletweyne, Somalia in May 2016.
Credit AMISOM Photo/Tobin Jones
