G7 | G20
TRACK 2
DIALOGUE

Background Paper

Beyond Adaptation and Mitigation

An Overview of Loss and Damage within the Indonesian Context

Authors :

Henriette Imelda (IRID), Lisa Schultheiß (Germanwatch)

Contributors :

Ann Phang, Felita Putri, Felix F, Giovanni Maurice Pradipta, Petter Lyden (Germanwatch)

Layout Design :

Maginate Creative Communication

Indonesia
Research
Institute for
Decarbonization

G7 | G20
TRACK 2
DIALOGUE

Table of
Contents

02 / Introduction

06 / 1. Loss and Damage due to Climate Change

08 / 2. Loss and Damage within the UNFCCC Negotiations

10 / 3. Loss and Damage in Indonesia

- 11 • A. Impacts of sea-level rise and flooding in Pekalongan, north Java
- 12 • B. Impacts of the Seroja Cyclone
- 13 • C. Climate change impacts on Indonesia's electricity supply

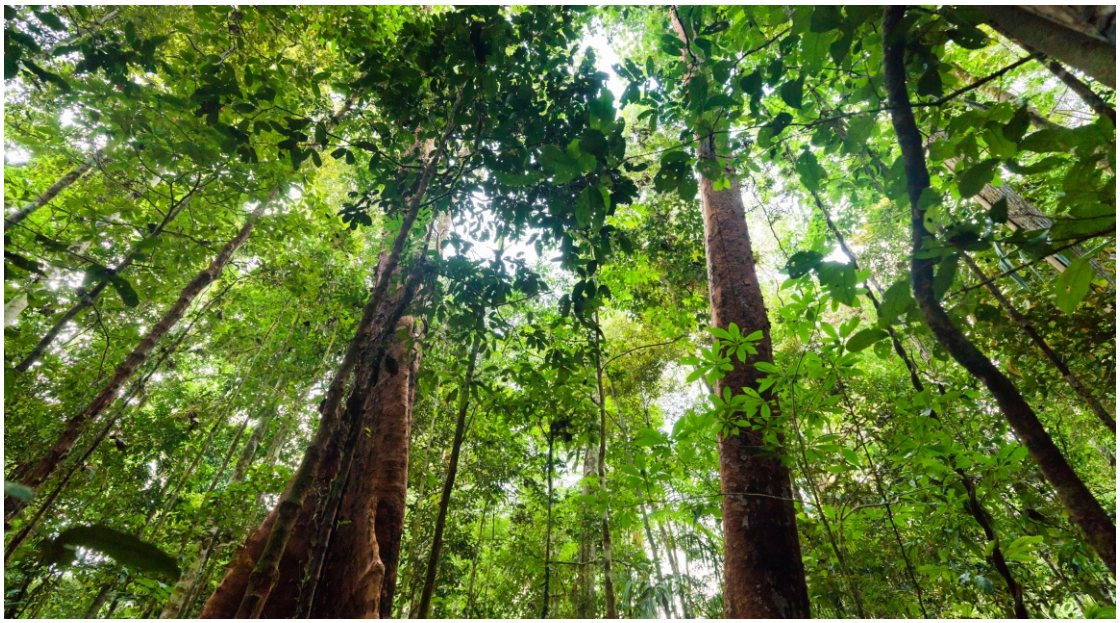
14 / 4. Loss and Damage Funding

- 16 • 1. Funding for Loss and Damage within and outside of the UNFCCC
- 17 • 2. Relevant multilateral funding for financing Loss and Damage
- 18 • 3. National funding for Loss and Damage

20 / Conclusion

22 / References

Introduction



© Stephane Bidouze / Shutterstock

Jungle vegetation in Aru islands, Papua, Indonesia

As climate change progresses, its devastating impact on people's lives and livelihoods is becoming increasingly apparent. Recent examples include the destructive monsoon-related floods in Pakistan (World Weather Attribution, 2022) and floods and landslides on the islands of Java and Sulawesi in Indonesia (Floodlist, 2022). As the recent IPCC Sixth Assessment Report of Working Group II states, (see figure 1) climate change 'has led to widespread adverse impacts and related losses and damages to nature and people' (IPCC, 2022). The likelihood that global warming will reach or even exceed 1.5°C in the near future, even for the lowest greenhouse gases (GHG) emissions scenario, is more than fifty per cent; the higher the temperature increase, the greater the impacts of climate change, and the greater the losses and damages (see figure 2). This development is reflected in the international climate negotiations, where Loss and Damage has become an increasingly important issue, culminating in the decision at COP27 to establish a Loss and Damage Fund and related funding arrangements.

As an archipelago, Indonesia is particularly vulnerable to the impacts of climate change, and associated Loss and Damage. As climate change progresses, extreme weather events, such as prolonged droughts, increased rainfall, and flooding, will become more frequent. The country will also be affected by slow-onset events, such as sea level rise, which could flood parts of the country, including Jakarta Bay, Pekalongan, among others. These events will lead to an increase in losses and damages, making the issue, And how to minimise, avert and address it an important policy area for Indonesia (Sari & Indriyari, 2015).

This policy brief addresses Loss and Damage in the Indonesian context. It begins by explaining the concept of Loss and Damage and providing an overview of its history within the UNFCCC. It then looks at Loss and Damage in the Indonesian context. Finally, it provides an overview of Loss and Damage financing options.

(a) Observed impacts of climate change on ecosystem

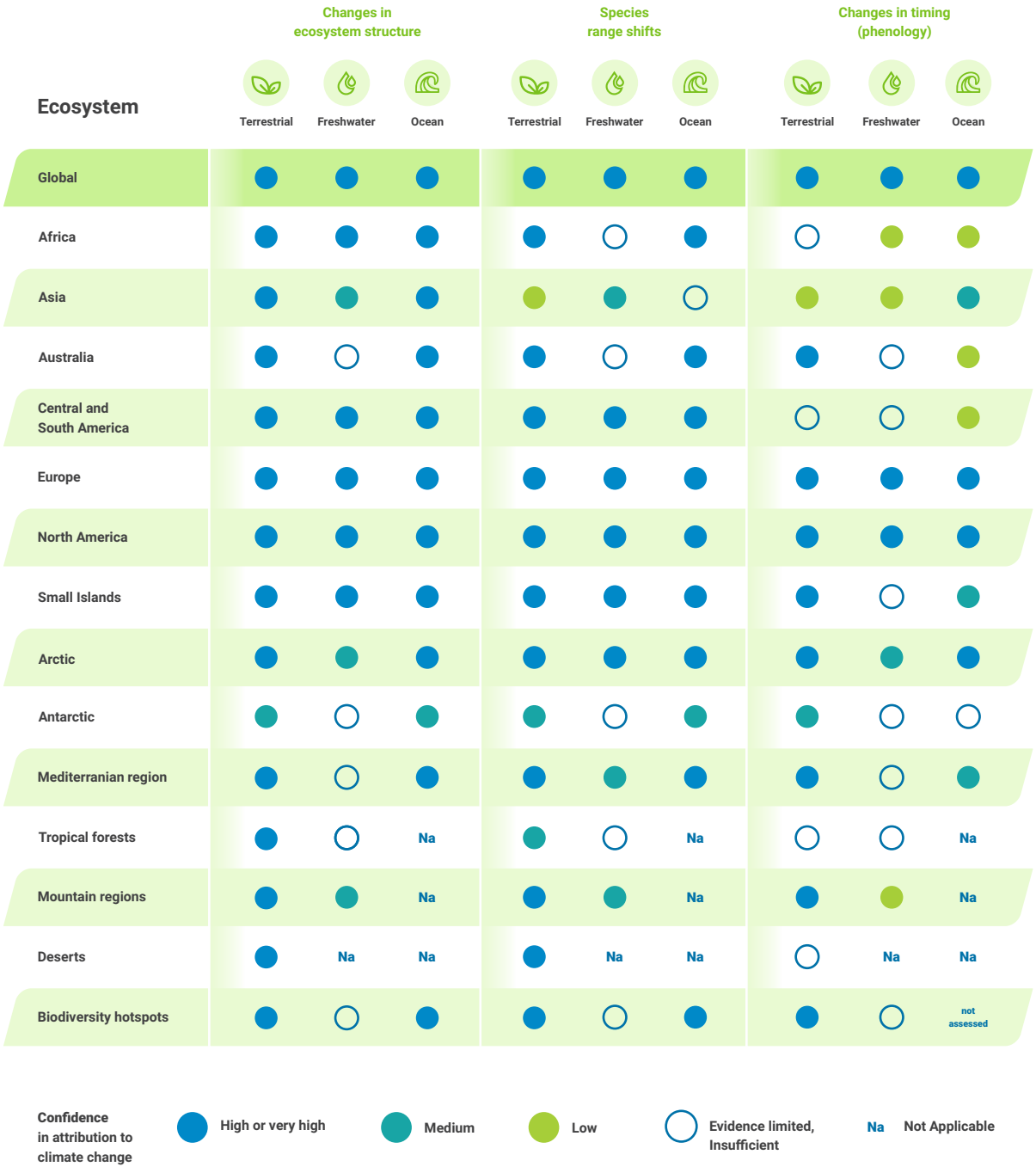


Figure 1

Climate Change Impact on several ecosystems and human systems around the world

(b) Observed impacts of climate change on human systems

Figure 2 Climate Change Impact on several ecosystems and human systems around the world

COMPARING RISKS FROM RISING TEMPERATURES:

EXPLAINING THE IPCC'S WORKING GROUP II REPORT (AR6)

Note: For climate risks with projected ranges, we used the midpoint of the ranges to compare risks at different temperature thresholds. Sea level rise projections correspond to SSP1-1.9, SSP1-2.6, SSP2-4.5, which are roughly approximate to global warming of 1.5°C, 2°C and 3°C, respectively.

Figure 3 Climate change risk compared to the temperature rise (WRI 2021)

1

Loss and Damage due to Climate Change

The concept of Loss and Damage, as seen in Figure 3, encompasses losses and damages caused by the impacts of climate change. Because Loss and Damage is highly contested and has implications for the liability and compensation debate, there is no official definition under the UNFCCC, rather various interpretations (Calliari et al. 2020; Benjamin et al. 2018). Additionally, Warner and Van der Geest (2013) describe it as 'the adverse impacts of climate variability that humans have been unable to cope with or adapt to,'.

The two drivers of Loss and Damage are extreme weather events and slow-onset events. According to the UNFCCC (2018a), extreme weather events include droughts, tropical storms, and altered precipitation, while slow-onset events include coral bleaching, sea level rise, and ocean acidification. Unfortunately, current research focuses mainly on coping with extreme weather events, while slow-onset events tend to be neglected (Schäfer, Jorks, Seck, 2021).

Generally, Loss and Damage can be divided into two categories: economic and non-economic. Economic losses and damages are characterised by a loss of or damage to monetary value and are associated with income or productivity (Boyd et al., 2021), such as the loss of income or the loss of or damage to infrastructure. In contrast, non-economic losses and damages involve intangible or tangible assets that cannot be sold in markets. They are often of significant value to individuals or communities (McNamara, 2021) and may include losses of or damages to territory, cultural heritage, traditional knowledge, or biodiversity (Huq, 2022). Both categories can have far-reaching impacts on ecosystems and the lives and livelihoods of people. Loss and Damage is, for example, closely connected to food and water insecurity (World Food Programme, 2014; Singh et al., 2021), displacement, migration (Thomas & Benjamin, 2019; McNamara, Westoby, Chandra, 2020), mental health problems (Huq, 2022), and negative impacts on development (Heinrich Böll Stiftung, 2021).

© AsiaTravel / Shutterstock

The flooded street in the heart of Jakarta city, Indonesia.

While all countries are and will be affected by climate impacts, the impacts will be particularly severe for countries in the Global South, where they threaten to exacerbate existing inequalities and poverty (Schäfer, Jorks, Seck, 2021). This makes the topic of Loss and Damage also a topic of climate justice and explains its contentiousness within the UNFCCC negotiations.

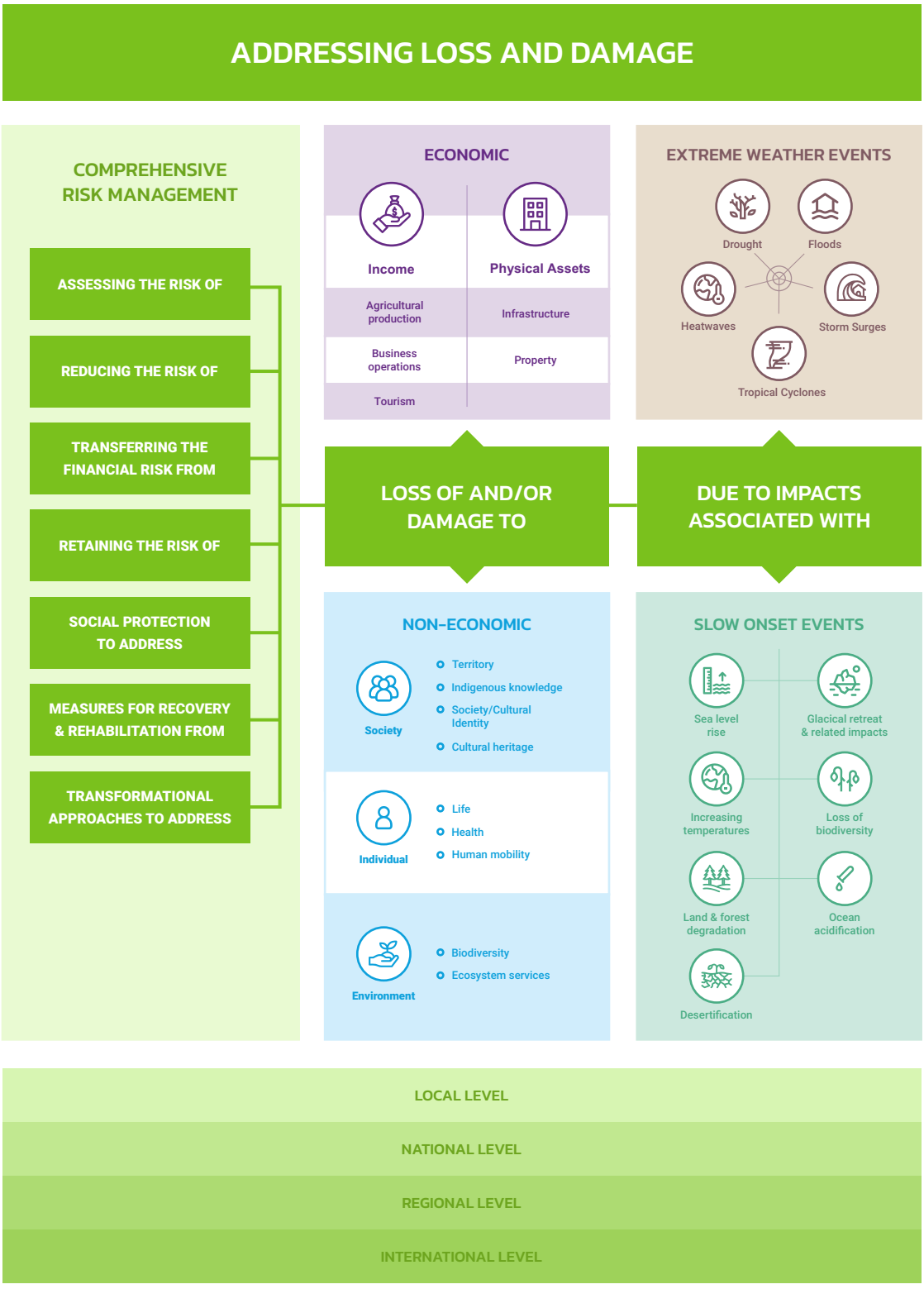


Figure 4
An approach to addressing Loss and Damage (UNFCCC Secretariat, 2019)

2

Loss and Damage within the UNFCCC Negotiations

Loss and damage first emerged at the founding conference of the UNFCCC in 1991. There, the Alliance of Small Island States (AOSIS) proposed an insurance pool to compensate Small Island Developing States (SIDS) and low-lying developing countries for sea-level rise. Although this proposal was rejected by the Global North (Calliari et al., 2019), it laid the groundwork for discussions on Loss and damage in the context of the climate negotiations. After this initial proposal, Loss and Damage repeatedly found its way into the negotiations, but it was not until COP13 that it successfully emerged on a broader platform as part of the Bali Action Plan. This plan stemmed from the fourth IPCC report, which found that Loss and Damage could no longer be avoided. Within the Bali Plan, the first official reference to Loss and Damage was made as part of enhancing adaptation action (Boyd et al., 2021).

At COP16, Loss and Damage officially became part of the negotiations with the implementation of a Subsidiary Body for Implementation Work Programme on Loss and Damage, which included a risk assessment, notions of how Loss and Damage should be approached, and the role of the Convention within it (Kempa et al., 2021; Boyd et al, 2021). Subsequently, at COP 18, institutional arrangements were made (Kempa et al., 2021).

At COP19, the Warsaw International Mechanism on Loss and Damage (WIM) and its Executive Committee (ExCom) were established. The WIM was introduced to address Loss and Damage, while the ExCom was mandated to lead the implementation of the WIM (Künzel et al., 2017). However, the WIM did not include a compensation or funding mechanism for Loss and Damage. It simply provided the framework for vulnerable developing countries to promote further action to address Loss and Damage (Ohdedar, 2016).

The next major step for Loss and Damage was achieved at COP21 with the adoption of the Paris Agreement, which included Article 8, on Loss and Damage. The inclusion of Loss and Damage in the Paris Agreement can be seen as a milestone, as Article 8 officially institutionalised Loss and Damage within the UNFCCC, de facto establishing it as the third pillar of climate negotiations, alongside mitigation and adaptation (Künzel et al., 2017). However, the article was agreed upon under conditions that explicitly exclude compensation and liability (Decision 1/CP21, para. 51) and do not include decisions on L&D financing.

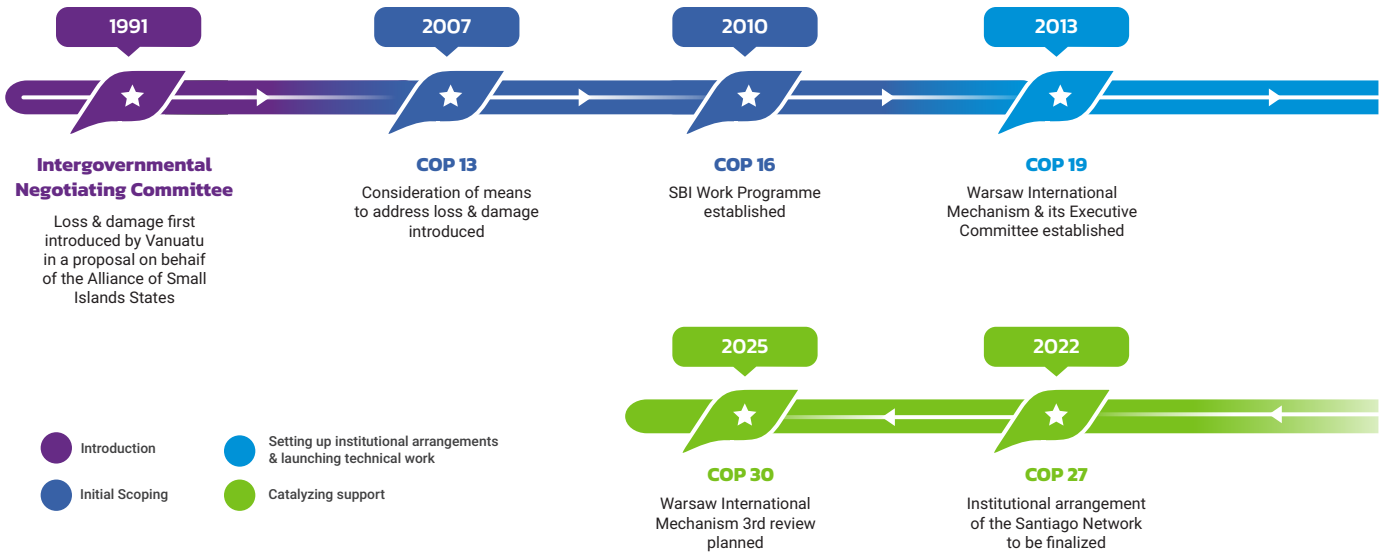
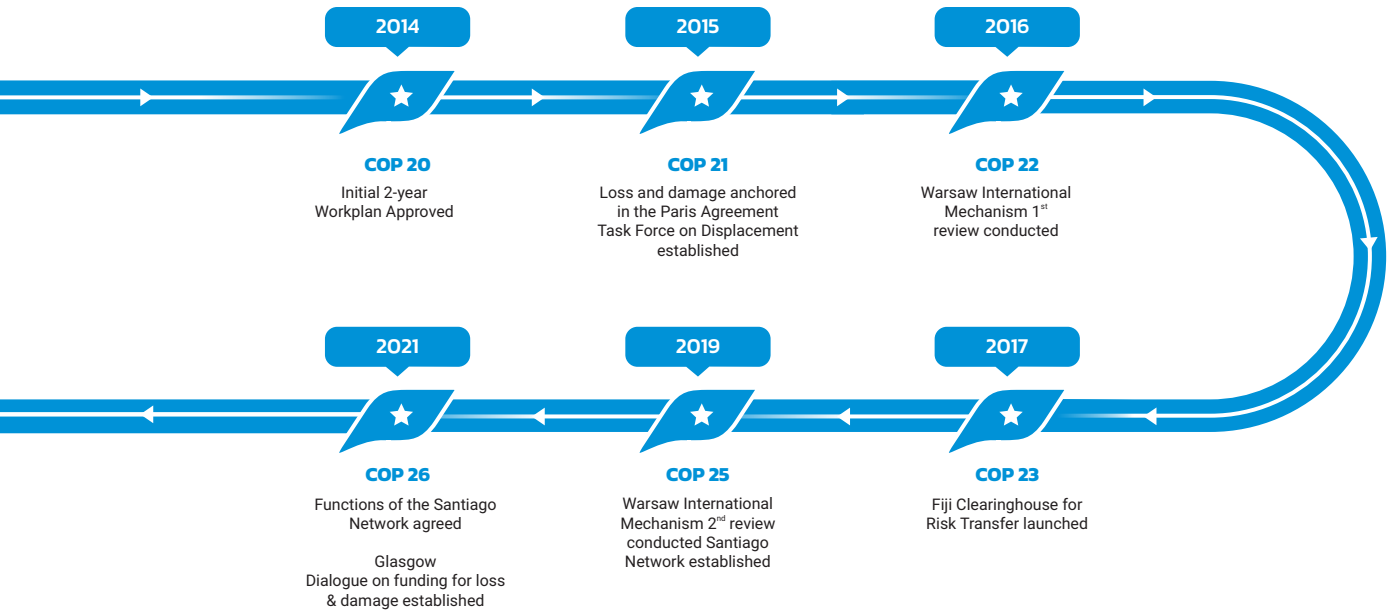


Figure 5 The Loss and Damage road map history under UNFCCC (Bhandari, 2022)

Thereafter, in 2019 (COP25), the Santiago Network on Loss and Damage (SNLD) was established to accelerate technical support for averting, minimising and addressing Loss and Damage. Two years later, at COP26 in Glasgow, the tasks of the SNLD were agreed upon and Parties were invited to make proposals on technical aspects of SNLD implementation, such as operational aspects and structure. The issue of Loss and Damage financing was also strongly emphasised in Glasgow, with the G77 and China calling for the establishment of a Loss and Damage Finance Facility (LDFF), which was strongly opposed by the countries of the Global North. Instead, the parties agreed to hold a dialogue to discuss Loss and Damage financing, the Glasgow Dialogue (Schwarz et al., 2021). The Glasgow Dialogue was first held in June 2022 at the 56th session of the UNFCCC Subsidiary Bodies (SB) in Bonn, Germany. The next Glasgow Dialogue will be held in June 2023 at the 58th SB. In addition to establishing the Glasgow Dialogue, Scotland became the first Global North actor to commit £2 million to Loss and Damage. This was followed by isolated bilateral commitments from philanthropies and the Walloon government, which pledged USD 3 million and USD 1 million, respectively (Schalatek & Roberts, 2021). These pledges put pressure on the Global North to pledge funding for Loss and Damage, although this did not happen until a year later, at COP 27.

COP27, held in December 2022, marked a breakthrough for Loss and Damage. First, after continued pressure from the G77, China, and international civil society, it was the first time that Loss and Damage was put on the agenda. Second, due to the persistence and unity of the G77 and China, and the late, but influential, support from the EU, the parties agreed to establish a fund and related funding arrangements for responding to Loss and Damage. A Transitional Committee was established to discuss the establishment of the fund and funding arrangements in three meetings throughout 2023 and report back to Parties at COP28.

In addition to the formal negotiations at COP27, there were also been bilateral pledges, for example from Spain, the UK and Belgium, to fund Loss and Damage, as well as international initiatives such as the Vulnerable 20/G7 Global Shield Against Climate Risks initiative. The Global Shield aims to improve the coordination of the Global Climate and Disaster Risk Financing and Insurance architecture (Germanwatch, 2022). Besides the financing aspect of Loss and Damage, the Parties did successfully operationalized the SNLD. However, the host of the SNLD will not be decided until the SB in June 2023. At COP28, Parties will have the difficult task of putting the Fund and the funding arrangements into practice, as negotiations will now shift to more granular issues (Germanwatch, 2022).



3

Loss and Damage in Indonesia

Indonesia is particularly vulnerable to the impacts of climate change, and associated Loss and Damage. The damage is very notable in the last decade as the total Loss and Damage caused by climate change-related calamities in 2015 are around 20 times greater than the Loss and Damage caused by natural disasters in 2018 (Sopaheluwakan, 2022).

	LOMBOK EQ 07/2018	SULAWESI EQ & TSUNAMI 09/2018	SUNDA STRAIT EQ & TSUNAMI 12/2018	INDONESIA EL NINO 2015
	564	2.101	429	~20
	1.886	4.338	1.485	~100.000 (respiratory problem)
	11.510	221.450	16.082	...(millions)
	1.3 Bn US$ (0.1% GDP)	1.21 Bn US$ (0.1% GDP)	*surveyed*	25 Bn US$ (2% GDP)

Figure 6 Loss and Damage figures between 2015 and 2018 in Indonesia

Indonesia's Meteorological, Climatological, and Geophysical Agency (BMKG) has projected Indonesia's climate for an extended period. As of 2023, the annual temperature rise in Indonesia is 1°C on average. However, according to the projection, the temperature rise might exceed 3°C in 2100. Indonesia may also experience high rainfall and drought at the same time (Sopaheluwakan, 2022). The possible impacts of these changes must be considered in Indonesia's long-term development plan.

Three sample cases of climate change impacts below show the importance of Loss and Damage in the Indonesian context: They are the sea level rise in Pekalongan, Seroja Cyclone in East Nusa Tenggara, and various problems in the national electricity supply.

A Impacts of sea-level rise and flooding in Pekalongan, north Java

Pekalongan, located on the northern coast of Java, has a population of 1.2 million and a considerable flood risk. Historical data shows that there has been high climate variability in Pekalongan for the last several decades, such as a change in rainfall patterns and more frequent floods (Syam et al., 2021). Pekalongan experiences high precipitation, which is more intense and prolonged, and occurs during the drought season, a significant change in this region.. The sea level increase reaches 5 mm per year between 2012-2018, whereas the subsidence of land surface reached approx. 10-17 cm during the same period. Thus, making Pekalongan more vulnerable to flood.

At the beginning of 2020, extreme rainfall combined with coastal flooding submerged 1,478 hectares of land in Pekalongan. As a result, people were forced to migrate from the area that was permanently flooded. However, despite the flooding, some people chose to stay in the affected area because of their socio-economic conditions and attachment to the region's culture and heritage.

Pekalongan's farmer and fisher communities were the most affected by the reoccurring disasters. More frequent floods submerged the surrounding regions, resulting in crop failure. Coastal flooding also damaged the physical structure and reduced the water quality, which is essential for the continuity of fish farming in the coastal area.

Batik manufacturing, the most significant industry in Pekalongan, was also highly affected by the flooding. In general, the small-scale batik producers faced problems in the supply chain during the floods, in addition to their houses and production sites being submerged.

An impact analysis conducted in 24 villages in Pekalongan with a high to very high-risk profile shows that the economic loss due to the flood amounted to USD 474.4 million in 2020. These losses include material and non-material losses, such as mental health issues, household conflicts, reduced land productivity, and ecosystem loss, which impacts the tourism sector, among other sectors.

The future climate forecast of the Pekalongan region shows a further increase in extreme rainfall intensity and frequency, especially in the upstream area. The increase in sea level (approximately 0.81 cm/year) combined with subsidence (about 0-34.5 cm/year) will worsen the impact of floods. The inundated area will increase from around 1,478 hectares in 2021 to 5,721 hectares in 2035, about 90% of Pekalongan city and most coastal area in Pekalongan regency. The flooded areas usually are agricultural land, aquaculture site, and residential space. Around 51% of the Pekalongan city area is predicted to be submerged in 2020-2035. In 2035, it is estimated that about 41 villages will be flooded, and the total annual economic loss will reach USD 2.152 billion.

Voluntary adaptation efforts, including elevating the ground surface of the street and house, have been done in Pekalongan. The local government also built a sea wall to protect against floods. However, the sea wall is not a long-term solution. Moreover, it has created a new flood area.

For their part, because of the floods, farmers are shifting from agriculture, like cultivating rice and white jasmine (Jasminum Sambac), to aquaculture. Due to the loss of productive land, some farmers have been forced to find work in other informal sector.

B Impacts of the Seroja Cyclone

Seroja Cyclone is a tropical cyclone that occurred in East Nusa Tenggara in April 2021. One of the causes of the cyclone was the warming temperature of the ocean surface, which reached 26.5°C at 60-meter sea depth (BMKG, nd). The cyclone started in Sawu sea, located on the southwestern part of Timor island. The Meteorological, Climatological, and Geophysical Agency estimated the impacts of the Seroja Cyclone. The following is their estimation (AHA Centre, 2021):

- **Heavy rainfall with thunderstorms and strong wind in several regions such as Central Java, Yogyakarta, East Java, Bali, West Nusa Tenggara**
- **Moderate rainfall in East Nusa Tenggara**
- **Wave with height around 2,5-4 meters possibly occurring in the southern sea of Java island to West Nusa Tenggara, south Indian Ocean, Java Island to Bali, the southern sea of Western Nusa Tenggara to Sumba Island**

Adonara Island and Lembata Island In the Sawu Sea, East Nusa Tenggara Indonesia.

Seroja Cyclone hit Indonesia with a wind velocity up to 65-85 km/h, which caused floods, flash floods, strong winds, and slides, especially in East Nusa Tenggara and West Nusa Tenggara. Nine hours of heavy rainfall caused overloading of dams in four districts. As a result, many houses and paddy fields were drowned. The National Disaster Management Authority (BNPB) reported that 509,604 people were impacted by Seroja Cyclone, of which 11,406 people were evacuated, 181 people died, 271 people were injured, 45 people were missing, and 66,036 houses were damaged in Western Nusa Tenggara and Eastern Nusa Tenggara (AHA Centre, 2021).

C Climate change impacts on Indonesia's electricity supply

The discussion on electric supply is always related to the mitigation effort of climate change. Climate change has also affected power plants in Indonesia. Some have been forced to temporarily cease operations, leading to electrical supply shortages and blackouts in several places. The following table shows climate and weather-related incidents and the impact and loss on Indonesia's power plant, transmission, and electricity distribution due to climate phenomena.

One of the most interesting events recorded was the jellyfish migration that caused a 20-day shutdown of the Paiton powerplant, with a loss of USD 21.7 million. Jellyfish entering the thermal plant is an extraordinary event that occasionally occurs on the northern coast of Java island. According to the Meteorological, Climatological, and Geophysical Agency, the jellyfish entrance was triggered by extreme cold temperatures in the Australian ocean, forcing jellyfish to migrate to the northern sea of Java. In an initial effort to address the problem, the water input pipelines were cleaned and a net installed. However, these efforts did not prevent the jellyfish from entering the power plant, so Paiton unit 9 was forced to shut down. This caused an electricity shortage in the Java electricity sub-system, requiring the sub-system to import electricity from the oil-based Bali sub-system. Similar event also occurred at the Tanjung Jati B coal power plant.

Climate and weather-related events	Direct impact	Indirect impact	Affected Utility	Period	The estimated loss from the utility in USD
IMPACT ON POWER PLANT					
Very heavy precipitation	Coal had a high moisture content Wet coal clogged the coal feeders	Lower combustion efficiency Lower electrical power output	Surabaya Coal Power Plant	2011-2017	**21.5** million
	Heavy river flow carrying trash to the ocean	Water flow to the power plant was blocked because of the trash	Gas power plants in Muara Karang, Priok, and Tambak Lorok	2011-2017	**15** million
	Several days long of heavy rain caused flooding	Flood in power plant	Gas power plant in Muara Karang	2013	**6.2** million
Strong wind and high ocean wave	Difficulties in transporting coal	Lower power output/shutdown of power plant	Surabaya Coal Power Plant	2011-2017	**1.2** million
Ocean temperature change	Increase in ocean temperature	Reduced efficiency in cooling water system	PJB Paiton		N/A
	Jellyfish migration	Jellyfish migration to the cooling water system of the thermal power plant caused a decrease in power output/shutdown of powerplant	Paiton unit 9 (coal power plant)	2016	**21.3** million
Drought	Decrease in water inflow	Decrease in power output	Saguling and Cirata Hydro Power Plants	2011	**51.5** million
IMPACT ON ELECTRICAL TRANSMISSION					
Flood	The electrical substation was inundated	Power blackout, Damaged tools	Multiple state-owned power plants	2013	**9.1** million
IMPACT ON ELECTRICAL DISTRIBUTION					
Strong wind	Conductor damage due to collision with objects carried by the wind	Power blackout	Multiple state-owned power plants	2014-2015	**13.1** million and affecting **2.1** million customers

Table 1

Impacts of extreme events on the power plant, transmission, and distribution in Indonesia (Handayani, 2019)

4

Loss and Damage Funding

Several studies have calculated the required finance for Loss and Damage globally. According to Oxfam (2019), Loss and Damage will range globally from USD 640 to 695 billion in 2030, of which 400 to 431 billion will occur in the Global South. In 2050, these numbers could increase to USD 1.6 to 2.8 trillion globally, and 1.1 to 1.8 trillion in the Global South. Mechler et al. (2019) support this high number by estimating Loss and Damage in the Global South ranging from USD 116 to 435 billion in 2020, to 290 to 580 billion in 2030, to 551 to 1.016 billion in 2040, and reaching 1.132 to 1.741 billion in 2050.

The great need for Loss and Damage finance is also reflected in the climate negotiations. At COP26 in Glasgow, the G77 and China called for the establishment of a Loss and Damage Finance Facility, to be located under the UNFCCC Funding Mechanism (Sharma-Khushal et al., 2022). However, the proposal was rejected by countries of the Global North, which have historically blocked any attempts to address Loss and Damage finance in the UNFCCC negotiations. As a compromise, it was agreed to organise the Glasgow Dialogue, in which arrangements related to Loss and Damage finance (especially the component of 'addressing Loss and Damage') would be discussed annually at the Subsidiary Body for Implementation (SBI) meeting session until the 60th SBs in 2024. The topic was elevated at COP27. For the first time, Loss and Damage was included on the agenda (agenda point 8f 'Matters relating to funding arrangements for addressing Loss and Damage') and it was agreed to establish a Loss and Damage Fund and respective funding arrangements.

Ideas around the design and operationalisation of the fund and funding arrangements will be discussed in the context of the Transitional Committee, established at COP27, which will meet three times until COP28. The Transitional Committee will have to address many questions. For example, the text of the decision refers to the fact that the funding arrangements relate to 'particularly vulnerable developing countries,' but does not specify this further. In addition, the question of who pays into the fund needs to be clarified. This could lead to an expansion of donor structures, as the decision text refers to 'expanding sources' and 'other sources' in terms of financing possibilities and also opens up the option for innovative sources of financing, such as an international air passenger levy or windfall taxes on fossil fuel companies. The Committee will also need to consider how the international financial financial architecture, including multilateral development banks and the International Monetary Fund, can contribute to Loss and Damage funding arrangements (Germanwatch, 2022). In the coming months, it will also be important for the committee to explore the extent to which initiatives such as the Global Shield can contribute to Loss and Damage funding and how to ensure that structures complement rather than duplicate each other. To do this, it is worth taking a look at the funding that is already in place and identify gaps.

© Ethan Daniels / Shutterstock

Corals in shallow water near limestone islands in Raja Ampat, Indonesia.

Current Funding and Gaps

In 2019, the UNFCCC Secretariat prepared a technical report to inform Parties on current funding to address Loss and Damage (UNFCC Secretariat, 2019). The report combined a number of mappings of existing solutions, including: the summary report of the 2016 Standing Committee on Finance (UNFCCC, 2016); the 2018 Suva Expert Dialogue (UNFCCC, 2018b); the 2019 WIM review; and a Germanwatch publication on the potential for Loss and Damage financing in the existing UNFCCC financial architecture (Schäfer, et al, 2021). The UNFCCC Secretariat report specifically highlighted that Loss and Damage finance was difficult to track because it had not yet been identified as a separate category: Loss and Damage finance was often referred to as funding for adaptation, disaster risk reduction (DRR), or in conjunction with development, sectoral, or humanitarian efforts. The lack of a separate finance category for Loss and Damage and a separate agenda item on Loss and Damage finance changed at COP27. However, until a clear differentiation between the respective categories has been established, the possibility of Loss and Damage being mixed with funding for adaptation, DRR, development or humanitarian efforts persists.

Moreover, to date, funding efforts for Loss and Damage have focused mainly on averting and minimising, rather than addressing, Loss and Damage. Averting refers to efforts to mitigate and adapt to climate change, and minimising relates to climate change adaptation. However, as addressing comprises the actual losses and damages happening, it is vital to scale up its funding (Künzel & Schäfer, 2022).

Within the already existing Loss and Damage funding, several important gaps can be identified. These include measures to address non-economic Loss and Damage, measures immediately following the occurrence of an extreme weather event, and measures for early stages of slow-onset processes. Current solutions and funding are also not sufficient to cover rapid response measures to address Loss and Damage, and subsequent measures to cover Loss and Damage that has already occurred (Schäfer, Jorks, Künzel, Seck, 2021; Künzel & Schäfer, 2022).

So far, the measures best covered by existing Loss and Damage funding are climate risk insurance schemes (Schäfer, Jorks, Künzel, Seck, 2021). However, there are several reasons why such insurance is not the silver bullet for addressing Loss and Damage (Richards and Schakatek, 2018). Most notably, the premium payment and its affordability raises questions of climate justice, as most people affected by Loss and Damage in the Global South did nearly nothing to contribute to the climate crisis and may not be able to pay for the premium. Although insurance schemes are one of the most appropriate options for addressing Loss and Damage, this is why such schemes are not considered a suitable option as a primary mechanism. The following section provides examples about existing Loss and Damage funding, besides insurance schemes.

1 Funding for Loss and Damage within and outside of the UNFCCC

The UNFCCC noted that several examples of existing funding are relevant for Loss and Damage funding (UNFCCC Secretariat, 2019). These include: the Adaptation Fund, the Special Climate Change Fund, The Green Climate Fund, and multilateral funding such as the Pilot Program for Climate Resilience of the Climate Investment Fund (CIF). In addition, the UNFCCC also listed other funding options inside and outside the UNFCCC (such as the Global Environment Facility, regional risk transfer mechanisms such as the Pacific Insurance and Climate Adaptation Programme or international financial institutions such as the World Bank) which also have the potential to fund actions related to Loss and Damage caused by climate change.

1.1 Funding within existing UNFCCC funds

The use of existing UNFCCC funds (e.g. the Adaptation Fund, the Special Climate Change Fund, or the Green Climate Fund) for Loss and Damage funding could be a promising solution. However, it is important to consider that these are often not fit-for-purpose in terms of Loss and Damage. For example, the funds operate on a multi-year project basis, which is ill-suited for several measures to address Loss and Damage. Nevertheless, existing and potential funding opportunities within these funds are presented below.

- ***Adaptation Fund***

  20% of the Adaptation Fund portfolio is dedicated to Disaster Risk Reduction and Early Warning Systems, which could be seen as Loss and Damage financing. The Adaptation Fund can fund efforts to build climate resilience through risk assessment and prevention. This has been done in Latin America with the project *Reducing Climate Vulnerability and Flood Risk in Coastal Urban and Semi-Urban Areas in Cities in Latin America*, which aims to strengthen the Early Warning System and climate monitoring.

  The Adaptation Fund also allows for the implementation of risk reduction and social safeguards through adaptation and various environmentally friendly adjustments to agricultural production. One example is the project *Integrating Flood and Drought Management and Early Warning for Climate Change Adaptation in the Volta Basin*, which assists local farmers in responding to floods and droughts. However, the Adaptation Fund lacks an explicit mandate with respect to many elements and measures dealing with Loss and Damage (Künzel & Schäfer, 2022). For example, it lack a mandate for non-economic loss, such as loss of biodiversity, loss of shelter (which forces people to migrate), and loss of social and cultural identity. Furthermore, the Fund is poorly financed.

- ***Special Climate Change Fund (SCCF)***

  The SCCF is a climate-dedicated, grant-focused fund. SCCF can fund technical and regulatory assistance efforts, such as the *Southeast Europe and Caucasus Catastrophe Risk Facility* project. This project intends to develop weather risk insurance and reinsurance products and raise public awareness of weather risk in participating countries. However, as the SCCF depends on voluntary funding pledges, additional funds should be allocated to the SCCF to guarantee sufficient coverage (Künzel & Schäfer, 2022).

- ***Green Climate Fund (GCF)***

  The GCF can fund actions related to addressing Loss and Damage. The GCF has various funding instruments, as well as a *Private Sector Facility* (PSF) which can disburse funds beyond grants and can support the development of risk transfer mechanisms that are not possible in other UNFCCC funding. In a preliminary analysis conducted by the UNFCCC Secretariat, the GCF has even been ahead of the curve in disbursing funding related to economic and non-economic losses ranging from slow-onset events to extreme events. For example, the GCF has funded several projects involving risk assessment – through projects that implement the *Early Warning System*. These projects can reduce the number of casualties and risks by building resilience through infrastructure development, ecosystem-based adaptation, flood mapping, and an early warning system.

GCF also has several projects related to risk transfer, including introduction of a weather index-based insurance program. GCF has also funded several projects related to slow onset events, including projects related to salinisation, sea level rise, ocean acidification, and activities linked to extreme events such as storms/cyclones.

However, there are also several limitations of the GCF regarding the funding of Loss and Damage. For example, there are difficulties in reaching people on the ground and the lengthy and bureauctratic application process. The high upfront costs and capacities needed for the application represent hurdles for many countries of the Global South. In addition, the expectation to prove climate relevance through local studies is a problem. Due to a lack of historical data, it is impossible for many countries to provide this data (Künzel & Schäfer, 2022).

2 Relevant multilateral funding for financing Loss and Damage

- ***Pilot Programme for Climate Resilience (PPCR) from CIF***

The PPCR is designed to integrate climate resilience with development plans. Actions funded by the PPCR are intended to be combined with other sources of funding, for example, from development banks, governments and/or the private sector. As such, PPCR can cooperate with partner institutions that serve as intermediaries and guarantors to increase the funding related to Loss and Damage efforts.

PPCR is designed to provide programmatic funding linked to national development plans and has four main objectives:

- **Piloting and demonstrating approaches for the integration of climate risk and resilience into development policy and planning;**
- **Strengthening capacity at the national level to integrate climate resilience into development planning;**
- **Scaling up and increasing investments related to climate resilience based on ongoing initiatives; and**
- **Enabling the learning-by-doing process and exchanging lessons at the country, regional, and global levels.**

3 National funding for Loss and Damage

Some countries have made several efforts to fund their respective countries' potential Loss and Damage by using the state budget. Examples in Southeast Asia include Singapore and Timor Leste.

- ***Singapore***

  As a small island country, Singapore is highly vulnerable to slow-onset events such as sea level rise. Therefore, in its development plans, Singapore has always considered the impact of sea level rise on its social and economic viability.

  Singapore has an agenda to protect its coastal areas, with the aim of minimising loss of life, and damage to assets and infrastructure, and ensuring that the purpose of land-use is well maintained (per the land conversion requirements under Singapore's land use Masterplan).
  Singapore's strategy to achieve this goal is to continuously build resilience related to sea level rise, such as adding localised protection for critical infrastructure, diverting, discharging and retaining emerging surface water. Singapore also tries to be less reliant on foreign funding and to develop its domestic funding for adaptation efforts to the fullest extent possible, thereby minimising potential Loss and Damage due to the impacts of climate change.

  Singapore's *Significant Infrastructure Government Loan Act* (SINGA) allows the government to borrow to fund large and long-term infrastructure projects. SINGA has been effective since August 2021. Projects that are considered eligible for loans are (Teo, 2022):

  - **Infrastructure projects that cost at least USD 4 billion;**
  - **The projects are essential to Singapore's national interest, as well as the public interest;**
  - **The infrastructure to be built has a lifespan of at least 50 years;**
  - **The Government must own these projects.**

  The proposed loan must also meet the safeguard provisions determined by loan limit and loan interest limits.

  The Singapore government has also developed the *Singapore Green Bond Framework*. In the fiscal year 2022, the Singapore Government stated that it would issue 'green bonds' worth SGD 35 billion, starting with the public sector (Teo, 2022). The proceeds from this green bond issuance will be used to fund the implementation of the Singapore Green Plan 2030, in which Singapore makes some efforts to transition to a low-carbon economy and achieve sustainable development goals.

  The Singapore government has also launched the Coastal and Flood Protection Fund (CFPF) with an initial SGD 5 billion (Teo, 2022). The proceed from SINGA and the green bond framework is also allowed to be used for the CFPF. Other funding sources that contribute to the CFPF are a combination of several funding instruments, including development funds and government loans.

  Additionally, Singapore has implemented Public-Private Partnerships in developing some infrastructure, such as Marina East Desalination Plant and the *Jurong Island Desalination Plant*, to provide clean water in Singapore. This scheme can also be used to develop the infrastructure needed to mitigate the risk of sea level rise in Singapore.

Timor Leste

Timor Leste is experiencing a wide range of climate change impacts, such as floods, droughts, landslides, soil erosion, sea level rise, and tropical storms, to name a few. These impacts have led to a decline in agricultural production, disruption to food security, shortages of clean water, and damage to infrastructure and other buildings. Timor Leste has even seen the impacts of climate change increasing in several key sectors, such as infrastructure, water resources, and social life, as well as other economic and non-economic losses and damages.

On April 4, 2021, Timor Leste was hit by Seroja tropical storm, which caused flash floods and landslides. It also experienced powerful winds that destroyed 13 cities in the country. The Post Disaster Needs Assessment (PNDA) reported that there were 33,835 houses affected by the floods, of which about 81.6% were in Dili, the capital of Timor Leste. More than 15,000 people were evacuated, with 42 fatalities (Barbarosa, 2022).

More than 30,000 houses were heavily damaged, 26,067 homes suffered minor damage, and 4,231 houses were severely damaged or even completely collapsed. The estimated loss in the residential sector alone reached USD 69.5 million (Barbosa, 2022).

Timor Leste has allocated a budget for disaster risk management and emergency response to anticipate losses and damage that may occur. Concerning the Seroja storm, the government of Timor Leste allocated USD 1.5 million in the 2021 state budget related to flooding. This budget's purpose was to finance the state's efforts from April to June 2021. Following the disaster, Parliament approved an increase in the funding allocated to the Contingency Fund or reserve fund from USD 23.8 million to 65.2 million. This allocation will be used to restore infrastructure in flood-affected communities. However, these funds are only for extreme events, not slow-onset events. In addition, these funds remain insufficient to even fund recovery after extreme events.

Aerial photo of Dili, Timor-Leste

5

Conclusion

The tangible effects of climate change are already being felt by many people, regardless of whether or not we as a global community can achieve the 1.5°C target. Various nations affected by these impacts have attempted to come up with solutions, but without the support of international organizations, addressing the challenges posed by climate change-induced disasters would be a significant obstacle to overcome.

As with other countries, the climate change-induced disasters in Indonesia have caused substantial financial costs that frequently remain unresolved. Additionally, there are non-monetary, humanitarian consequences, such as forced displacement and loss of biodiversity. These factors highlight the significance of developing international policies focused on Loss and Damage, which has become an essential pillar alongside adaptation and mitigation efforts.

In order to effectively implement comprehensive Loss and Damage policies and funding systems, there is a strong need to streamline the bureaucracy in the affected countries. Furthermore, international collaboration across various sectors is required to develop Loss and Damage policies, as well as to provide scientifically sound data and knowledge to advance research in related fields. Countries with high levels of vulnerability to climate change-induced disasters should also continue to advocate for the issue of Loss and Damage in international forums.

© Rich Carey / Shutterstock

Environmental damage in Indonesia.

References

AHA Centre. (13 April 2021). Flash Update: No. 03 – Tropical Cyclone 26S (SEROJA), Indonesia – 13 April 2021. https://ahacentre.org/flash-update/flash-update-no-03-tropical-cyclone-26s-seroja-Indonesia-13-April-2021/ (accessed on 11 October 2022)

Barbosa, A.S. (28 July 2022). Financing Loss and Damage in Timor-Leste. Delivered on FGD of Indonesia Research Institute for Decarbonization, Jakarta, 28 July 2022.

Benjamin, L., Thomas, A., Haynes, R. (2018): An "Island" COP Loss and Damage at COP23, Review of European, Comparative & International Environmental Law, 27 (3), pp. 332-340.

Bhandari, P., 'Loss and Damage Scene Setting': Presentation to the 2nd Focus Group Discussion "Loss and Damage and its Importance for Southeast Asia Region," organised by IRID & Germanwatch, delivered on IRID FGD, 28 July 2022.

Boyd, E. et al. (2021): Loss and damage from climate change: A new climate justice agenda. One Earth, 4 (19), pp. 1365-1370.

Calliari E., Surminski, S., Mysiak, J. (2019): The Politics of (and behind) the UNFCCC"s Loss and Damage Mechanism. In Mechler, R. et al. (2019): Loss and Damage from Climate Change. Cham: Springer International Publishing, pp. 155-178.

Calliari, E., Serdeczny, O., Vanhala, L. (2020): Making sense of the politics in the climate change loss & damage debate. Global Environmental Change, 64, pp. 1-10.

Floodlist (2022): Indonesia – 4 Dead, 30,000 Affected After Floods and Landslides Hit Java and Sulawesi Islands.

Germanwatch (2022): Weltklimakonferenz in Krisenzeiten: Klimapolitik wurde nicht vom Tisch gefegt.

Handayani, K., Filatova, T., dan Krozer, Y. (24 September 2019). The Vulnerability of the Power Sector to Climate Variability and Change: Evidence from Indonesia. Energies 2019, 12, 3640.

Hans-O. Portner and others, Climate Change 2022: Impacts, Adaptation, and Vulnerability – Summary for Policymakers (IPCC) <https://report.ipcc.ch/ar6wg2/pdf/IPCC_AR6_WGII_SummaryForPolicymakers.pdf> accessed on 27 June 2022.

Heinrich Böll Stiftung (2021): Unpacking finance for loss and damage – spotlighting the finance gap: what differentiates finance for addressing loss and damage from other types of finance.

Huq, S. (13 April 2022). Recognizing Loss and Damage and How to address it in the National Context. Delivered on FGD Indonesia Research Institute for Decarbonization, Jakarta, 13 April 2022.

IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K.

Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp.
3–32, https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf

Kempa, L., Zamarioli, L., Pauw, W.P., Çevik, C. (2021): Financing measures to avert, minimise and address Loss and Damage: Options for the Green Climate Fund (GCF). Frankfurt School FS-UNEP Colaborating Centre.

Künzel, V., Schäfer, L., Minninger S., Baldrich, R. (2017): Loss and Damage at COP23: Looking at Small Island Developing States. Germanwatch.

Künzel, V., Schäfer, L. (2022): Status quo of and next steps for the Glasgow Dialogue. Germanwatch.

McNamara, K., Westoby R., Chandra A. (2021): Exploring climate-driven non-economic loss and damage in the Pacific Islands, Current Opinion in Environmental Sustainability, 50, pp. 1-11.

Mechler, R., Bouwer, L.M., Schinko, T., Surminski, S., Linnerooth-Bayer, J. (2019). Loss and Damage from Climate Change: Concepts, Methods and Policy Options. Springer Open.
Ohdedar, B. (2016). Loss and Damage from the Impacts of Climate Change: A Framework for Implementation. Nord.J.Intl.L. 1, 4.

Oxfam. (November 2015). Impacts of Low Aggregate INDCs Ambition: Technical Summary. Climate Analytics.

Richards, J.A., Schalatek, L. (2018): Not a Silver Bullet: Why the focus on insurance to address loss and damage is a distraction from real solutions.

Schwarz, R. et al. (2022): Factsheet zur COP26. Germanwatch.

Scottish Government. (20 May 2022). Scottish Government at COP26: What was achieved?. Scottish Government. https://www.gov.scot/publications/scottish-government-cop26-achieved/pages/21/ accessed on 11 October 2022.

UNFCCC Secretariat. (14 June 2019). Elaboration of the sources of and modalities for accessing financial support for addressing loss and damage: Technical paper by the secretariat. UNFCCC. FCCC/TP/2019/1

Sari, D.A.A., Indriyani, R. (2015): Loss and Damage due to climate change in Indonesia: an overview of the ASEAN cooperation adapting to global warming. Indonesian Journal of International Law, 12(3), Article 6.

Schäfer, L., Jorks, P., Seck, E. (2021): Financing Instruments and Sources to Address Loss and Damage from Slow-onset Processes. Germanwatch & Enda Énergie. Schalatek, L., Roberts, E. (2021): Deferred nit defeated: the outcome on Loss and Damage finance at COP26 and next steps. Heinrich Böll Stiftung.

Sharma-Khushal, S.S, Schalatek, L., Singh, H., White, H. (May 2022). Discussion Paper: The Loss and Damage Finance Facility Why and How. CAN International, Christian Aid, Heinrich Boll Stiftung, Practical Action, Stamp Out Poverty.

Singh, C., Jain, G., Sukhwani V., Shaw R. (2021): Losses and damages associated with slow-onset events: urban drought and water insecurity in Asia, Current Opinion in Environmental Sustainability, 50, pp. 72-86.

Sopaheluwakan, A. (13 April 2022). Climate Change in Indonesia and Support of the Met-community for Loss and Damage Agenda. Delivered on FGD Indonesia Research Institute for Decarbonization, Jakarta, 13 April 2022.

Syam, D., Ranggi, K., dan Okura, Y. (2021). 'Lost communitites: the impact of sea level rise and flooding in Pekalongan, northern Jawa, Indonesia' in Ritu Bharadwaj dan Clare Shakya (eds), Loss and damage case studies from the frontline: a resource to support practice and policy. Internasional Institute for Environment and Development.

TCWC Jakarta. (nd). Proses Terbentuknya Siklon Tropis. http://tcwc.bmkg.go.id/siklon/learn/02/id accessed on 11 October 2022

Teo, J. (28 July 2022). Loss and Damage and its Importance for Southeast Asia: Singapore's Approach. Delivered on FGD Indonesia Research Institute for Decarbonization, Jakarta, 28 July 2022
Thomas, A., Benjamin, L. (2019): Non-economic loss and damage: lessons from displacement in the Caribbean, Climate Policy, 20 (6), pp. 715-728.

UNFCCC (2016): Summary Report in and recommendations of the 2016 forum of the Standing Committee on Finance.

UNFCCC (2018a): Online Guide on Loss and Damage.

UNFCCC (2018b): Report of the Suva Expert Dialogue.

UNFCCC (2019): Elaboration of the sources of and modalities for accessing financial support for addressing loss and damage. Technical paper by the secretariat.

Warner, K., van der Geest, K. (2013): Loss and Damage from climate change: local-level evidence from nine vulnerable countries, International Journal of Global Warming, 5 (4), pp. 367-386.

World Food Programme (2014): Loss & Damage- Repairing shattered lives.

World Weather Attribution (2022): Climate change likely increased extreme monsoon rainfall, flooding highly vulnerable communities in Pakistan.

G7 | G20
TRACK 2
DIALOGUE

G7 | G20 TRACK 2 DIALOGUE

G7 | G20 Track 2 Project is a channel to allow 'trickle-down / bottom-up' dialogues between civil society and governments to discuss climate change policies in the context of G20. Our partner CSOs in each country represent the global south countries in these dialogues.

Federal Ministry
for Economic Cooperation
and Development

Financially supported by
the German Federal Ministry for Economic Cooperation and Development.
Responsibility for the content rests with Power Shift Africa and Germanwatch.

Participating NGOs :

GERMANWATCH · climate & company · KEHATI · VASUDHA FOUNDATION · Indonesia Research Institute for Decarbonization · IESR · POWER SHIFT AFRICA

GERMANWATCH

G7 | G20 Track 2 Dialogue

Germanwatch e.V.

Office Bonn

Kaiserstr. 201

D-53113 Bonn

Phone: +49 (0)228 60 4920

Website: www.germanwatch.org

Office Berlin

Stresemannstr. 72

D-10963 Berlin

Phone: +49 (0)30 5771 3280

E-mail: info@germanwatch.org

IRID

Equity Tower Building Lt. 37

SCBD, Jl Jenderal Sudirman Kav 52-53

Senayan, Kebayoran Baru

DKI Jakarta 12190, Indonesia

Website: irid.or.id

#g7g20dialogue

www.germanwatch.org/de/g20