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Financing measures to avert, minimise and address Loss and Damage: Options for the Green Climate Fund (GCF)

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Disclaimer

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Abbreviations

AOSIS	Alliance of Small Island States
ARC	African Risk Capacity
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung
CCRIF	Caribbean Catastrophe Risk Insurance Facility
COP	Conference of the Parties
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
EbA	Ecosystem-based Adaptation
EUSF	EU Solidarity Fund
ExCom	Warsaw International Mechanism for Loss and Damage Executive Committee
GCF	Green Climate Fund
GDP	Gross Domestic Product
IPCC	International Panel on Climate Change
L&D	Loss and Damage
LDC	Least Developed Country
NDA	National Designated Authority
NDC	Nationally Determined Contribution
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PMF	Performance Management Framework
RMF	Results Management Framework
SBI	Subsidiary Body for Implementation
SCF	Standing Committee on Finance
SIDS	Small Island Developing State
SREX	Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
WIM	Warsaw International Mechanism for Loss and Damage

1 Introduction

Over the last decade, loss and damage associated with climate change impacts (L&D) has become an increasingly important topic at the UN climate negotiations. L&D is conceptually understood and operationalised differently by different stakeholders. There are varying perspectives in the literature distinguishing between L&D and adaptation. This includes the emphasis on climate impacts or L&D from disasters, ex ante or ex post action, the role of finance, and the role of justice.[1] The spectrum of perspectives ranges from L&D being dealt with through mitigation and adaptation actions; to new approaches required for the unavoidable and irreversible impacts, particularly in vulnerable countries.[2]

Negotiations under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement have conceptualised L&D as resulting from sudden-onset events (climate disasters, such as cyclones) as well as slow-onset processes (such as sea level rise); and to potentially occur in human systems as well as natural systems. Historically, emphasis in research and policy has been on impacts on human systems, with a distinction made between economic and non-economic losses.[3]

In terms of narratives and views on L&D, developing countries, particularly those most vulnerable to climate change, tend to highlight countries' different historic responsibilities for climate change, including the need for compensatory measures by developed countries[4], whereas developed countries tend to highlight the role for national governments to comprehensively manage risks, i.e. hazards, exposure and vulnerability and frame averting, minimising and addressing L&D as part of adaptation, risk reduction, disaster preparedness and emergency response as well as resilient recovery.[5]

Increasingly, negotiations and research focus on the question of how to finance measures that avert, minimise and address L&D. For example, out of the 46 countries that mention 'loss and damage' in their climate action plans under the Paris Agreement (so called National Determined Contributions (NDCs)), nine mention it in the context of financial support.[6,7] Literature on L&D has been exploring the financing of L&D-related activities and although several authors have suggested that this could be achieved through the Green Climate Fund (GCF), such suggestions have not been substantiated.[8]

Building on the review of the 2019 Warsaw International Mechanism for Loss and Damage Associated with Climate Impacts (WIM, for more information, see Annex 1), the Conference of the Parties (COP) at the UN climate negotiations in Madrid invited the GCF Board to continue providing financial resources for activities relevant to averting, minimizing and addressing L&D , to the extent consistent with the institutional set-up of the GCF, and to facilitate efficient access in this regard (see Box 1 for the full guidance).

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[1] Boyd, E. et al., (2017)
[2] Boyd, E. et al., (2017)
[3] UNFCCC, (2013b); Article 8 Paris Agreement; UNFCCC (2019b)
[4] Mechler, R., et al., (2019); Calliari, E., (2018)
[5] Calliari, E., (2018); Mechler R and T. Schinko, (2016); Schinko, T., et al, (2018)
[6] The numbers reflect the indications in NDCs combined with those from intended NDCs for those countries that have not ratified the Paris Agreement by the time of writing.
[7] Pauw, W.P, et al., (2016)
[8] Hirsch, T. (2019); Roberts, E. & Zakieldeen, S. (2018); Hoffmaister, J. & Stabinsky, D. (2012); Künzel, V. et al. (2017).

This report identifies to what extent the GCF already finances measures to avert, minimise and address L&D, and how the fund could continue to do so, in the context of the guidance given by the COP. In the context of the five 'strategic workstreams' of the work plan of the UNFCCC's Executive Committee of the WIM (ExCom) (see Chapter 2), this report analyses both the current institutional set-up and the current project portfolio of the GCF (including projects approved at the 27th Board meeting (B.27)) to determine to what extent the GCF may play a role in financing L&D measures in the coming years.

The report is structured as follows. Chapter two provides an overview of how L&D has evolved in the UNFCCC negotiations, and explains some of the existing controversy in the context of countries' negotiation positions. Chapter three provides an overview of how academic literature and other research has addressed some of the most contested issues, including the conceptualisation and framing of L&D, the costs of L&D, and the financial instruments that could avert, minimise and address L&D. Building on Chapters two and three, Chapter four will first outline how the institutional set up of the GCF currently allows for financing measures to avert, minimise and address L&D, concluding that this is often partial and implicit. Second, this Chapter analyses the extent that all 165 GCF projects that were approved by the Board up to B.27 take action on L&D. Finally, Chapter five concludes and discusses a range of options on how the GCF could continue to finance measures to avert, minimise and address L&D more explicitly. The recommendations range from easier and more immediate measures, which can be implemented under the current GCF set up, to moderate and more far-reaching options, which would require different levels of amending the GCF structures and framework conditions and are therefore considered less feasible.

2 Background: loss and damage in the UNFCCC negotiations

Loss & Damage (L&D) has been a part of the international climate negotiations since the Cancun Climate Conference in 2010 (COP16). A leading role in spearheading L&D in the negotiations was taken by the Alliance of Small Island States (AOSIS)[9], who called for an insurance pool to compensate vulnerable small islands and low-lying developing countries for the impacts of sea level rise.[10] In general, some of the key elements of the negotiating position of developing countries have tended to be that 1) L&D should be considered as distinct from adaptation; 2) climate negotiations are the correct forum for discussions on L&D; 3) developed countries should be held liable for L&D; 4) developing countries should be compensated.[11]

Developed country negotiators have been reluctant to discuss L&D as separate from adaptation negotiations.[12] The UNFCCC Bali Action Plan of 2007, refers to "disaster risk reduction strategies and means to address loss and damage" in the adaptation section.[13] They point to the complex drivers for losses and damages, including climate variability, the risk exposure of people and assets, and socio-economic vulnerability, many of which are considered to lie outside the control of international climate negotiations.[14] Despite the contention over how L&D should be dealt with under the UNFCCC, a two-year work programme was agreed under the Cancun Adaptation Framework.[15]

At COP16, the Subsidiary Body for Implementation (SBI) Work Programme on L&D was established to consider approaches to address L&D and to strengthen international cooperation and expertise to increase knowledge on L&D.[16] Their technical work included assessing the risk of L&D and the role of the Convention in implementing approaches to address L&D.

A decision was reached at COP18 (2012) to establish institutional arrangements to address L&D[17] and the WIM was established at COP19 to "address Loss and Damage associated with climate impacts, including extreme events and slow onset events, in developing countries that are particularly vulnerable to the adverse impacts of climate change"[18] (see Annex 1 for more information about the WIM).

In 2015, developing countries emphasised the importance of L&D in the negotiations of the Paris Agreement[19], also raising concerns about how adaptation finance might be reduced in order to finance action on L&D.[20] The Paris Agreement (2015) was formally adopted with Article 8 recognising the importance of averting, minimising and addressing L&D associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of L&D. However, it did not address the financing of L&D related

[9] Calliari, E., (2018)
[10] (Mechler et al., 2019); Mechler, R., et al., (2019)
[11] Huq, S. and R. De Souza, (2016)
[12] Calliari, E., (2018)
[13] UNFCCC, (2007)
[14] Schinko, T., et al, (2018)
[15] See: Roberts, E. and S. Huq, (2015); McNamara, K.E., (2014); Roy, J., et al. (2018)
[16] See UNFCCC (2011). Note that 'averting, minimising and addressing' L&D was not used until the Paris Agreement.
[17] UNFCCC, (2013a)
[18] UNFCCC, (2020a)
[19] Hoffmeister, V., and S. Huq, (2015)
[20] Ibid

measures. For example, efforts by the negotiators from the LDCs to include L&D in Article 9 (on climate finance) were not successful.[21] Parties also decided in the cover decision of the Paris Agreement (1/CP.21) that Article 8 does not provide a basis for any liability or compensation.

The initial 2-year work plan of the WIM identified areas of cooperation and facilitation[22] to enhance understanding, action and support for L&D. It requested the inclusion of work to advance the operationalisation of the Paris mandates relating to a Clearing House on Risk Transfer and a Taskforce on Displacement[23]. COP22 (2016) approved the indicative framework for the five-year rolling work plan of the WIM ExCom, which was welcomed by COP23. The areas of cooperation and facilitation were concentrated into five strategic workstreams (see Table 1), including cross-cutting issues such as the consideration of particularly vulnerable developing countries, vulnerable populations and the ecosystems on which they depend.[24]

Table 1. Five Strategic Workstreams Addressing Loss and Damage

Workstream	Description
Slow onset events	Events include increasing temperature, desertification, loss of biodiversity, land and forest degradation, glacial retreat, sea level rise, ocean acidification, and salinisation. Activities aim to improve the understanding of slow onset events, as well as enhance the capacity to address them, particularly at regional and national levels.
Non-economic losses	Non-economic losses are additional to the loss of property, assets, infrastructure, agricultural production and/or revenue that can result from the adverse effects of climate change. It covers L&D that is not easily quantifiable in economic terms, such as loss of life, degraded health, losses induced by human mobility, loss or degradation of territory, cultural heritage, indigenous knowledge, societal/cultural identity biodiversity, and ecosystem services. This workstream aims to enhance data collection on knowledge and awareness of non-economic losses, so that they can be taken into account in national level measures.
Comprehensive risk management approaches	Comprehensive risk management approaches include risk assessment, risk reduction, risk transfer and risk retention. Such approaches aim to build long-term resilience of countries, vulnerable populations and communities to L&D, including in relation to extreme and slow onset events, through: emergency preparedness; measures to enhance recovery, rehabilitation and build back/forward better; social protection instruments, including social safety nets; and transformational approaches.
Migration, displacement, and human mobility	Human mobility comprises migration, displacement and planned relocation related to the adverse impacts of climate change. The main purpose is to better understand the impacts of climate change on human mobility, develop and disseminate recommendations for integrated approaches to avert, minimise and address climate-related displacement, as well as facilitate stakeholder engagement for further action.
Action and support	This workstream targets enhanced cooperation and facilitation in relation to action and support, including finance, technology and capacity-building, to address L&D associated with the adverse effects of climate change.

Source: based on UNFCCC, 2019

At COP23 (2017), the Fiji Clearing House for Risk Transfer was launched to collate information regarding insurance and risk transfer for Parties to develop and implement comprehensive risk

[21] Fry, I., (2015)
[22] Early-warning systems; emergency preparedness; slow onset events; events that may involve irreversible and permanent loss and damage; comprehensive risk assessment and management; risk insurance facilities; climate risk pooling and other insurance solutions; non-economic losses; resilience of communities, livelihoods and ecosystems.
[23] Boyd, E. et al., (2017)
[24] UNFCCC, (2020b)

management strategies. At COP24 (2018), the Taskforce on Displacement provided recommendations on what actually can or should be done to avert, minimise and address L&D, including the relevant stakeholders.[25] The recommendations included actions and policy instruments to strengthen the preparedness and capacity of national and local governments to address climate-related impacts and displacement. During COP23, the ExCom organised a side event on risk financing for slow onset events, to facilitate discussions on features of financial instruments and tools, as well as innovative ways for collaboration and partnerships to enhance action and support for addressing the risks of slow onset events.

Some developing countries again called for the establishment of a new L&D financing mechanism in the Madrid negotiations. The proposed decision text from the G77 and China Submission on the review of the WIM and its Report requested that "the operating entities of the Financial Mechanism under the Convention to expand their focus areas to cover thematic areas such as slow onset events, comprehensive risk management, human mobility and non-economic losses" (para 32).[26] The Group also called for "adequate, easily accessible, scaled up, new and additional, predictable finance, technology and capacity building" for L&D actions (para 1)[27]. The draft decision of 9 December on the Report of the Executive Committee of the WIM and the 2019 review of the Mechanism included an option to "Request[s] the Board of the Green Climate Fund to provide, through the appropriate modalities, expedited access to adequate, scaled up, new and additional funding for developing country Parties to assist them to address climate change impacts in the areas of slow onset events, non-economic losses, human mobility, and comprehensive risk management."[28]

The main funding source under consideration was from the GCF. However, some were concerned that this could take finance away from adaptation actions and would not be suitable for some aspects of L&D, such as immediate disaster relief.[29] The final decision on the guidance by the COP (2019e, decision 12/CP.25) is provided in Box 1 below, and is central to the research provided in this report.

> "*Invites the Board of the Green Climate Fund to* continue *providing financial resources for activities relevant to averting, minimizing and addressing loss and damage in developing country Parties, to the extent* consistent with *the existing investment, results framework and funding windows and structures of the Green Climate Fund, and to* facilitate efficient access *in this regard, and in this context to* take into account *the strategic workstreams of the five-year rolling workplan of the Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts* (emphasis added by the authors).

Box 1. Guidance by the COP on how the GCF should finance activities relevant for averting, minimizing an addressing loss and damage.

[25] COP24 WIM ExCom and Task Force on Displacement, (2018)
[26] UNFCCC, (2019c)
[27] Group of 77 and China Submission, (2019)
[28] UNFCCC, (2019a)
[29] Evans, S., and J. Gabbatiss, (2019)

This guidance was briefly discussed at the GCF's 25th Board meeting (March 2020).[30] Several Board members indicated that the issue of L&D is important and that more information is needed on how the GCF averts, minimises and addresses L&D, including in its pipeline of project proposals. Civil society organisations indicated in their statement that it is crucial in their view that the GCF does not subsume the entire concept of L&D under adaptation. According to them, averting and minimising L&D is part of adaptation, mentioning early warning systems and climate-resilient infrastructure as examples. However, addressing L&D is very different. They also stated that addressing L&D should not be limited to insurance systems in which the potential victims of L&D will be made to pay for the associated risks and coverage. Civil society organisations went beyond the guidance from Parties at the Madrid climate conference when stating that the GCF should develop and adopt a framework that 1) establishes clearly that the GCF will work with the Warsaw International Mechanism; 2) guides and facilitates GCF action on averting, minimising and addressing L&D, and 3) defines the concept of L&D clearly, including what activities would be supported.[31]

The GCF responded to the guidance by the COP in its ninth report. It stated its commitment to continue to provide financial resources for activities relevant to averting, minimising and addressing L&D, consistent with existing investment frameworks through its Readiness and Preparatory Support Programme, Project Preparation Facility as well as through its projects. The document provides a 'non-exhaustive list of projects and programmes with activities that are relevant for loss and damage' for each of the WIM Executive Committee workstreams.[32] This research can help to enhance the knowledge on such support.

[30] Guidance from Parties at the Madrid Climate Conference; See Decision 6/CMA.2 and UNFCCC, (2019a)
[31] See https://www.greenclimate.fund/boardroom/meeting/b25#videos (from minute 01:55 onwards)
[32] UNFCCC (20202c). Note this was not adopted by the Board at B.27.

3 Background: research on loss and damage

The IPCC Fifth Assessment Report highlights that there is no single definition of L&D in climate policy, and that analyses of policy documents and stakeholder views have demonstrated ambiguity.[33] The IPCC suggests that L&D is "associated with adverse impacts of climate change on human and natural systems, including impacts from extreme events and slow-onset processes"[34]. It refers to economic and non-economic impacts and irreversible and permanent L&D, including but not limited to loss of human life, biodiversity and loss of land, and damages of significant economic cost, for example from destroyed or heavily damaged infrastructure[35] that are caused, at least in part, by climate impacts.

3.1 Conceptualisation and framing of Loss & Damage

Based on the variety of perspectives on the meaning and scope of L&D, Boyd et al. (2017) identify four typologies of L&D: (1) adaptation and mitigation; (2) risk management; (3) limits to adaptation; and (4) existential.[36] These are not all mutually exclusive but can be seen as a scale in which, the closer to (1), the more prevention is required and the more existing institutions that address mitigation and adaptation are seen as adequate to deal with L&D. The closer to (4), the more emphasis is placed on liability and compensation and more pressure is put on new institutional arrangements separate from adaptation and mitigation.

According to the first typology, all climate impacts are potential L&D and can be dealt with through existing mitigation and adaptation activities. This includes adjusting development pathways, adaptation measures and comprehensive risk management approaches.[37] Averting, minimising and addressing L&D could be achieved through maximising the effectiveness of adaptation efforts including targeted actions such as early warning systems, risk finance and insurance programmes, sustainable land planning, building codes, transformational approaches, empowering communities, etc.

Literature focuses on a comprehensive risk management approach to L&D (typology 2), particularly integrating the existing and fragmented - and often competing - set of risk management tools[38], including disaster risk reduction and risk transfer mechanisms.[39] For example, Mechler et al. (2018) found that risk management could be the overarching goal to tackle L&D coupled with adaptation.[40] The Plan of Action of the Technical Expert Group on Comprehensive Risk Management under the WIM ExCom in its first workshop explored how climate risk assessments, climate information and monitoring systems should inform policymakers in handling multiple risks and simultaneous climate shocks.[41]

[33] Roy, J., et al., (2018)
[34] UNFCCC, (2014); UNFCCC (2012)
[35] Durand, A., et al., (2016)
[36] Boyd, E. et al., (2017)
[37] Roberts, E., and M. Pelling, (2018)
[38] Roberts, E., and M. Pelling, (2018); Boyd, E. et al., (2017)
[39] Cutter, S., et al., (2012); Mechler, R., and T. Schinko, (2016); Roberts, E., and M. Pelling, (2018)
[40] Mechler, R., et al., (2019)
[41] TEG-CRM Expert Group as input to the ExCom of the WIM, (2020)

Related to typology 3, the IPCC states that "residual loss and damage will occur from climate change despite adaptation and mitigation action"[42]. Authors who consider limits to adaptation[43] disaggregate adaptation and risk management and argue that investments and policy responses are required in development, adaptation, risk management, and residual L&D.[44] [45]

Finally, considering typology 4, non-economic losses and damages occur as direct or indirect consequences of climate change and may include loss of landscape, cultural heritage, or mental health in affected communities.[46] The literature highlights a prioritisation of the economic dimensions of L&D, which may be attributed to the challenges in quantifying the non-economic dimensions. Schäfer et al state that there is so far very little funding for non-economic losses, both ex ante and ex post.[47]

3.2 The Costs of Loss & Damage

The costs associated with enhancing action and support to L&D are still not clear, although literature provides some insights into the potential costs for 'residual damages'. For example, Richards and Schalatek (2017) compared different financing gaps, including adaptation finance and development aid.[48] They conclude that substantial finance is required. Although they do not provide a cost estimate, they suggest to set an objective of having finance flowing at a level of US$ 50 billion per year by 2020, with a vision of scaling up to US$ 200-300 billion per year by 2030. [49]

Schaeffer et al (2014) estimate that in Africa in a "4°C world with weak adaptation and weak mitigation", 'residual damages' could cost up to 6% of the continent's GDP annually by 2080. Even with strong adaptation measures in place, they calculate estimated costs at 3% of Africa's projected GDP annually by 2080.[50] Thomas et al (2018) estimate that in the Caribbean region, hurricane impacts, tourism losses and infrastructure damage just from sea level rise could cost US$ 22 billion annually by 2050 and up to US$ 46 billion annually by 2100, representing 10% and 22% of current regional GDP.[51]

However, any cost estimation for L&D is based on uncertainties and assumptions. At least five factors play an important role here. First, as indicated in Chapter 1 and in the section above, there is a lack of agreement on what constitutes L&D and measures to avoid it.

Second, activities and finance to recover from L&D not only lead to costs but may also contribute to reduced economic development and lower adaptive capacity. Even the threat of damage can lead to stranded assets as a result of slow onset events. In this context, Hirsch et al (2019) found that substantial investment is needed in comprehensive climate risk reduction for coastal communities and

[42] Klein, R.J.T, et al (2014); 16.
[43] McNamara, K.E., and G. Jackson, (2019)
[44] Linnerooth-Bayer, J., S. Hochrainer-Stigler, (2014)
[45] Dow, K., et al., (2013)
[46] Serdeczny, O., et al., (2016)
[47] Schäfer, L., et al., (2019)
[48] These financing gaps include the difference between cost estimates of achieving the Sustainable Development Goals and current development aid finance; as well as the gap between adaptation cost estimates and international public adaptation finance.
[49] Richards, J. and L. Schalatek, (2017)
[50] Schaeffer, M., et al., (2014)
[51] Thomas, A., et al., (2017)

cities. As the financial sector increasingly recognises climate risk in their operations, vulnerable countries face worsening capital market access, leading to higher indebtedness and lower investment.

Third, non-economic L&D is not easily quantifiable in economic terms. In most countries, some non-economic losses may be valued as significantly more important than economic losses.[52] A discussion is needed regarding the appropriateness of financial instruments to address non-economic losses and eventually alternative ways how they could address such losses, for example, through safeguarding.[53]

Fourth, mitigation pathways have an important effect in the long-term, while model uncertainty of projected climate impacts on a regional level is an even bigger methodological challenge in the short to medium term.

Finally, shifting baselines implies that countries that embark on risk-informed development pathways and invest in disaster risk reduction and -preparedness, for example through resilient infrastructure and multi-hazard early warning systems, will also be able to cope much better with rising climate risks.

3.3 Financing Loss & Damage

Financing measures that help to avoid L&D have not, to date, been explicitly tracked and reported. However, in the context of the UN climate negotiations, several approaches to financing L&D have been proposed, including financial support for the development of insurance schemes and risk transfer mechanisms, early warning systems, and emergency preparedness measures. The WIM promotes the implementation of these approaches; however, it does not provide a concrete plan to provide financial support as mandated in para 5 (c) (iii). [54,55]

The 2016 annual forum of the Standing Committee on Finance (SCF) was dedicated to the theme of financial instruments and tools that address the risks of L&D. The SCF Forum broadly discussed four types of financial approaches, instruments and tools: (1) risk transfer schemes; (2) catastrophe and resilience bonds; (3) social protection schemes; and (4) contingency finance[56] (see Table 2). In 2017, the WIM held a side event on risk financing for slow onset events and found that existing financial instruments are not available to all countries; and that risks of L&D may exceed some countries' national capacities. It also found that existing financial instruments may not be sufficient. They must be adequate and predictable, but also focus on building resilience such as through social protection schemes and livelihood diversification.[57]

Following these, the Suva Expert Dialogue, mandated by COP23[58], on comprehensive risk management approaches to extreme weather events and slow onset climatic processes, and mainstreaming climate and disaster risk financing instruments, explored how developing countries can be enabled to deal with

[52] UNFCCC, (2013b)
[53] WIM ExCom, (2016)
[54] UNFCCC, (2013c)
[55] For more information on WIM, please see Annex 1
[56] UNFCCC, (2019b)
[57] WIM ExCom, (2017)
[58] UNFCCC, (2018)

L&D. The Expert Dialogue highlighted two principle approaches to risk retention and financing: ex-post approaches and ex-ante approaches, for example contingency funds and social protection.[59]

Community-based approaches to risk reduction demonstrate how measures and approaches to reduce climate-related risks can deliver development benefits, and understand the impacts of risk reduction on ecosystem services and the links to human wellbeing. Supporting local authorities ex ante is also important to enable them to take action on risk reduction and scale up successful approaches.[60] The Dialogue identified a low level of awareness related to climate risks and discussed options to raise this awareness including through pilot projects and translating scientific knowledge for governments and communities. Significant focus was also given to risk transfer as an instrument with the potential to provide multiple benefits for climate risk management. Discussants strongly agreed that insurance is the most dominant risk transfer instrument to date.[61]

A range of different financial instruments for L&D are summarised in Table 2. An overview of investment support instruments relevant for L&D is given in Annex 2. Traditional disaster financing mechanisms tend to be categorised according to their sources (regional/national/international/risk transfer) and whether they are ex ante or ex post disaster instruments.[62]

Ex ante **disaster financing instruments** require advance planning and upfront investment, but allow the finance to be available almost immediately upon a disaster striking. This would allow a country or community to begin the recovery phase. Timely access to (international) finance following a natural disaster is often crucial but faces operational challenges. Ex ante disaster financing instruments include calamity funds, catastrophe bonds or other climate risk coping instruments. Ex ante action may also help to prevent or reduce risks through forecasts.

Ex post **disaster financing instruments** do not require advance planning or upfront investments; however, mobilising resources is more uncertain than for ex ante instruments and are typically more ideally suited to the reconstruction or long term recovery phases. Post-disaster financing instruments include donor assistance, budget reallocation, tax increase or credits.

It should be considered that there is no standard approach or single financial instrument that can address all the risks related to L&D. In financing, each risk faced by each community should be assessed in a tailor-made way against the available, or potentially available, financial instruments.

[59] UNFCCC (2018)
[60] UNFCCC (2018)
[61] UNFCCC (2018)
[62] Hirsh, T., et al., (2019)

Table 2. Ex ante and ex post Financing Instruments

Instrument	Description	Public / Private	Link to L&D	Strategic Workstream	Indirect Effects
Ex ante financing instruments					
Risk transfer schemes including cat risk insurance	Allows risk holders to spread losses across time, stakeholders and geographies. When risks cannot be reduced, risk transfer instruments such as insurance allow risk holders to transfer some of their financial risk to the insurer at a premium. Grants are among the most broadly referenced instruments as they can cover multiple risk management approaches. Catastrophe risk insurance at national or regional levels protects against low-probability, high-cost events.	Public	Payment upon climate catastrophe	1	Improves risk assessments, provides faster disaster response since payout is immediate, lowers premiums for lower risks, incentivises adaptation
Catastrophe and resilience bonds	Transfer risks to the capital market, thereby spreading them widely. They have mainly been issued by macro-level risk pooling facilities for reinsurance but are increasingly being taken into consideration by public entities as a risk-sharing mechanism as they provide immediate financial relief by enabling liquidation of the capital immediately after an extreme event.	Public and private	Payment upon climate catastrophe. Loans only forgiven in the event of a sudden disaster	3	Facilitates disaster response as response funds are already held and used when needed
Social protection schemes	Policies designed to reduce people's exposure to risks, enhancing their capacity to protect themselves against hazards and loss of income and are usually channeled through national government funds.	Public	Policies designed to reduce people's exposure to risks	2, 3	Improves risk planning and social protection actions

Ex-ante climate risk insurance incentivises investments, planning and development activities through providing a level of certainty. Insurance can provide timely and reliable finance to cover loss and damage, particularly compared to other post-disaster financing options such as aid or loans.[63] By transferring the risk ex ante, insurance clients are guaranteed payments for the agreed losses and damages from events ex post.[64]

As risks are pooled, it becomes increasingly likely that "severe climate-related losses and damages in one area will be offset by relatively minor losses and damages in another."[65] Aggregation of risk through risk management allows areas that are hit by disasters to access collective reserves when necessary and to 'gain catastrophe insurance on better terms'.[66] There are a number of facilities and funds offering risk insurance which serve as examples of how risk pooling can be utilised to address L&D. For example, the Caribbean Catastrophe Risk Insurance Facility (CCRIF); the EU Solidarity Fund (EUSF); the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI); and the African Risk Capacity programme (ARC).

There are also synergies between insurance and social protection mechanisms established by governments to protect the most vulnerable against shocks. The World Bank found that countries are better able to respond to natural disasters if robust social protection systems are in place.[67] Such systems can contribute greatly to reducing transaction costs and make

[63] GIZ, (2016)
[64] Linnerooth-Bayer, J., (2018)
[65] Durand, A., et al., (2016)
[66] Warner, K., et al., (2009)
[67] World Bank, (2014)

insurance products easier to communicate to target households. Social protection principles can also help governments and other stakeholders consider smart subsidies that help to make the clear distinction between market and non-market solutions, essential in reaching the poorest.[68] However, Linnerooth-Bayer et al., (2013) and Lu et al., (2018) argue that insurance and other pre-disaster risk financing instruments are not appropriate for slow onset events such as desertification or sea level rise.[69,70] Linnerooth-Bayer et al (2018) also finds that unless there is significant intervention in the design and implementation of market-based insurance mechanisms, they will not meet the WIM aspirations of loss reduction and equitable compensation.[71]					
Ex post financing instruments					
Contingency finance	Fast-disbursing finance that provides lines of borrowing to draw from when meeting a pre-defined trigger (e.g. the declaration of a state of emergency by the government). Funds provide for early response and recovery measures.	Public	Payment upon climate catastrophe	3	Improves risk planning
Disaster relief funds	In the case of (climate-related) extreme weather events, disaster relief funds can be quickly disbursed for response and recovery. All priority areas under the Sendai Framework for Disaster Risk Reduction have linkages to the actions for addressing L&D that require financing (disaster risk reduction finance) as identified under the Suva Expert Group.	Public	Payment upon climate catastrophe	3	Improves risk planning and social protection actions
Solidarity funds	Solidarity funds may be established or existing funds such as the EU Solidarity Fund could be used to cover L&D activities. Reinsurance also helps to spread risks and lower costs and could help to fund or at least partially cover L&D activities.	Public	Voluntary payments according to the needs of countries or people suffering from L&D as an act of distributive justice	3	Promotes 'climate justice'
Ex-post climate risk insurance coverage significantly helps economic recovery following a natural catastrophe, and depending on the type of catastrophe and the level of economic development, insurance coverage can even offset the negative indirect effects of natural catastrophes on national economies, bridging liquidity gaps after extreme weather events to speed up recovery efforts.					

[68] Schäfer L., and E. Waters, (2016)
[69] Linnerooth-Bayer, J. S. Hochrainer-Stigler, (2014)
[70] Lu, X., and R. Abrigo, (2018)
[71] Linnerooth-Bayer, J., (2018)

4 Loss and Damage and the GCF

No in-depth analysis exists on how to leverage the potential for the GCF to finance action on L&D. The only literature are the preliminary analyses conducted by the UNFCCC Secretariat[72] and a non-exhaustive assessment made by the GCF Secretariat, presented at its 27th Board meeting[73]. The UNFCCC concluded that the GCF is well positioned to address the multi-faceted nature of L&D actions.[74] It also mentions that the GCF has made headway in addressing economic and non-economic losses from slow onset and extreme events, for example through projects that specifically seek to implement early warning systems to reduce loss of life. According to the UNFCCC Secretariat, however, the GCF can "potentially play a more substantial and innovative role in financing relevant actions that may address L&D"[75]. In its own assessment, the GCF Secretariat reported to be already supporting loss and damage through its Readiness and Preparatory Support Programme, through it Project Preparation Facility and through projects and programmes. On the way forward, the GCF Secretariat indicates being strengthening linkages with the WIM Executive Committee[76].

Funding action on L&D under the GCF is only possible if it is in line with the scope of the GCF's Governing Instrument, Results Management Framework and Investment Criteria. This Chapter will first examine the current set-up of the GCF and the potential for financing action on L&D measures under these frameworks. Second, it will analyse the current GCF portfolio on 1) whether current project proposals approved up to B.27[77] mention L&D; and 2) whether the five strategic areas of work of the five-year rolling work plan of the Executive Committee are addressed in current funding proposals. Finally, this section will conclude on the extent to which action on loss and damage is and can continue to be financed by the GCF.

4.1 Framework conditions to finance action on loss and damage under the GCF

Governing Instrument

The Governing Instrument[78] provides the GCF with two windows: adaptation and mitigation, with an option for cross-cutting projects and programmes (§37). The Board has the authority to add, modify and remove additional windows and substructures or facilities as appropriate (§39). In addition, the Board 'shall' ensure adequate resources for capacity-building and technology development and transfer (§38).

The Governing Instrument also stipulates that the GCF needs to 'balance' the allocation of resources between adaptation and mitigation activities and needs to 'ensure appropriate allocation of resources for other activities' (§50). The balance was further defined later by the Board with the inclusion of the

[72] UNFCCC, (2019b)
[73] GCF, (2020b)
[74] (UNFCCC, 2019b)
[75] (UNFCCC, 2019b)
[76] (GCF, 2020b)
[77] Both Funding Proposals (FP) and Simplified Approval Process (SAP)
[78] GCF (2011)

‘aim’ of a 50:50 allocation between mitigation and adaptation over time, determined in grant equivalents.[79]

The Governing Instrument states that the GCF will provide financing in the form of grants and concessional lending, but that other ‘modalities, instruments or facilities’ may be approved by the Board.

In summary, although the Governing Instrument does not directly reference L&D, it offers options for financing L&D measures, including in terms of capacity building, technology development and transfer. The Governing Instrument also does not rule out further development, for example in terms of funding windows or financing instruments. This could be important in case the GCF is not able to respond to the guidance of the COP in a way that is considered adequate (see Box 1 and our analysis of the GCF portfolio in Section 4.2.

Strategic Plan

The initial Strategic Plan was adopted by the GCF Board in March 2016[80] and set out operational priorities and an action plan for the GCF’s initial resource mobilisation period. It focused on 1) scaling up GCF investments; 2) maximising impact with a balance between mitigation and adaptation funding; 3) ensuring responsiveness to developing countries’ needs and priorities; and 4) proactively communicating the ambition, approach to programming and operational modalities of the GCF, with a view to enhancing predictability, facilitating access and investing the full amount pledged.[81] It neither mentioned L&D, nor did it indirectly refer to L&D through the concepts that underlie the eight areas of cooperation and facilitation that were agreed in the Paris Agreement three months earlier (see Chapter 2). However, the initial Strategic Plan also did not elaborate funding priorities. For example, the strategic measures that the Board intended to promote are at the level of, for example, ‘prioritising pipeline development’ and ‘enhancing accessibility and predictability’. In this sense, the Strategic Plan does not exclude L&D projects either (see Chapter 4.3). All projects analysed in Section 4.2 were adopted under this initial Strategic Plan.

In October 2018, the GCF started to work on its Updated Strategic Plan. During discussions of the ‘Zero Draft’, at the 24th GCF Board meeting (19 October 2019) the concept of L&D was not discussed. However, written comments on the updated Strategic Plan by Germany, the LDCs, AOSIS and civil society that were submitted before the informal board meeting in February 2020 did include references to L&D.[82]

Germany states that the Strategic Plan needs to reflect how the GCF can continue to fund activities to avoid L&D without compromising the guidance on dividing financing 50:50 on adaptation and mitigation. In this comment, Germany also refers to the guidance provided at COP25 (see Box 1). This is also what the LDCs and the civil society reflect in their comments. Civil society further notes that the GCF should support L&D actions in the absence of a fully elaborated financing mechanism under the WIM. They also note that ‘without a commensurate increase of adaptation finance allocation, this

[79] GCF Board Decision B.06/06
[80] GCF Board Decision B.12/20
[81] GCF, (2016)
[82] These comments are available here: https://www.greenclimate.fund/about/strategic-plan

mandate would cannibalise resources for urgently needed adaptation actions in GCF recipient countries'.

The submission by AOSIS on the updated Strategic Plan focuses entirely on L&D. It first builds the case for the UNFCCC mandate to the GCF, and subsequently relates to ExCom/WIM's work plan and how to address its five strategic workstreams with the eight results areas of the GCF[83]. From the AOSIS' perspective, L&D can also be addressed through mitigation projects. For example, energy access is considered for its economic and non-economic consequences, such as leading to human security and preventing displacement, while transport is thought 'beyond the status quo' on its relevance to migration, displacement and planned relocation. Finally, although indicating that risk management is already implemented at the household/smallholder level, AOSIS recommends it to be expanded to government-level policies and schemes, both at regional and national levels.

The Updated Strategic Plan for 2020-2023 was approved by the Board at its 27th meeting in November 2020. In paragraph 8, it reiterates most of the guidance by the COP (see Box 1), although the reference to the WIM Workplan is replaced by a statement that the GCF will 'collaborate with the UNFCCC and others to help conceptualise relevant investments'.[84]

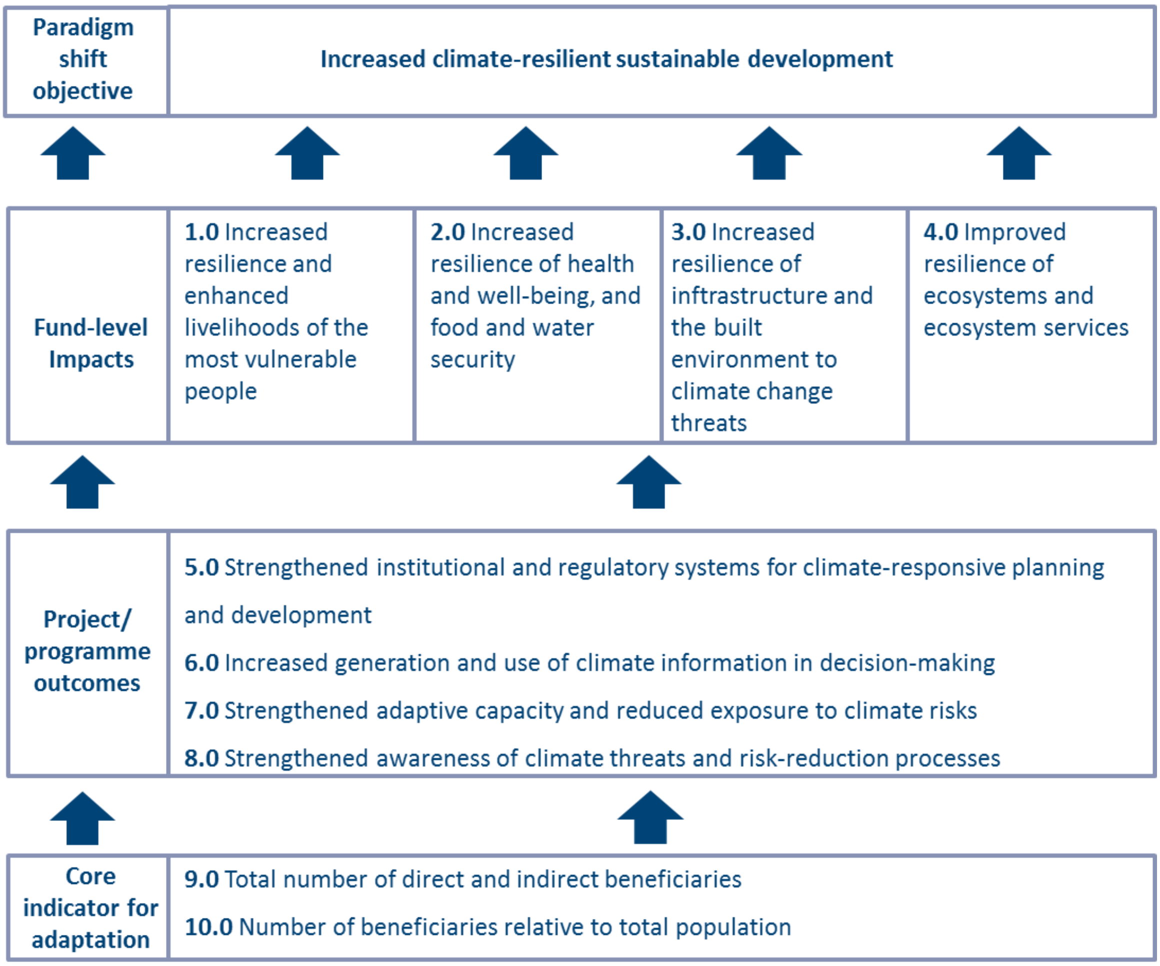
Results Management Framework

The purpose of the Results Management Framework (RMF) is to "(i) enable effective monitoring and evaluation of the outputs, outcomes and impacts of the Fund's investments and portfolio, and the Fund's organisational effectiveness and operational efficiency; (ii) include measurable, transparent, effective and efficient indicators and systems to support the GCF's operations, including, inter alia, how the GCF addresses economic, social and environmental development co-benefits and gender sensitivity."[85]

The RMF and its Performance Measurement Framework (PMF) provide an initial adaptation logic model that describes the paradigm-shift objective, four fund-level impacts on adaptation (or 'impact areas'), four project/programme outcomes, as well as one core indicator for adaptation (see Figure 1). It furthermore 'acknowledges that the 'inputs, activities, and outputs' will be defined on a case-by-case basis for each project/programme. Its Annex lists 'possible initial performance indicators' which may be taken into account for further work by the Secretariat. These include indicators highly relevant to L&D, such as 'value of infrastructure made more resilient to rapid-onset events (e.g. floods, storm surges, heat-waves) and slow onset-processes (e.g. sea-level rise)' and indicators less relevant to L&D, such as 'number of new infrastructure projects or physical assets strengthened or constructed to withstand condition from climate variability and change (e.g. to heat, humidity, wind velocity and floods)'.

[83] The GCF seeks to have an impact within 8 mitigation and adaptation results areas, balanced between mitigation and adaptation initiatives. These are: Mitigation: Agriculture, Forestry and Other Land-Use; Buildings, Cities, Industries and Other Appliances; Energy; Transport. Adaptation: Ecosystems and Ecosystem Services; Health, Food and Water Security; Infrastructure; Livelihoods of Vulnerable Communities.
[84] GCF, (2020)
[85] GCF, (2013b)

Figure 1. The adaptation logic model that underpins the Results Management Framework



Source: based on GCF/B.07/11/ Decision B.07/04 and IEU (2018)

In their review of the RMF, the Independent Evaluation Unit (2018) concluded that the approved and noted indicators that inform the RMF lack definitions, guidance and protocols for how these indicators are defined, measured, by whom, with what frequency and how. They note that two are not indicators but rather descriptions of the objective, but that they are still expected to inform top-level results of the fund. This leads to confusion and causes inconsistent usage of indicators across GCF stakeholders.[86, 87] However, this also creates more flexibility for projects to also take action on the five strategic workstreams on L&D (see Table 1). The fund-level impacts and the project/programme outcomes can be interpreted to also allow for projects to finance L&D activities.

Investment Criteria

The GCF's six investment criteria translate the GCF's overall objectives into guidelines for projects (see Table 3), determining how they should be designed to achieve the expected results. Each criterion is broken down by different coverage areas and activity-specific sub-criteria and for each sub-criterion. The Secretariat also uses indicative assessment factors to review proposals. If project proposals aimed to avert, minimise and address L&D would not score well on the investment criteria, it would be hard

[86] ((IEU), 2018)IEU, (2018)
[87] Pauw, W.P., et al., (2020)

to argue for the possible provision of finance within the GCF (without first conducing deep changes in the way the GCF funds its projects).

Table 3. Investment Criteria of the GCF

Investment criterion	Definition
Impact potential	Potential of the programme/project to contribute to the achievement of the Fund's objectives and result areas
Paradigm shift potential	Degree to which the proposed activity can catalyse impact beyond a one-off project or programme investment
Sustainable development potential	Wider benefits and priorities
Needs of the recipient	Vulnerability and financing needs of the beneficiary country and population
Country ownership	Beneficiary country ownership of, and capacity to implement, a funded project or programme (policies, climate strategies and institutions)
Efficiency and effectiveness	Economic and, if appropriate, financial soundness of the programme/project

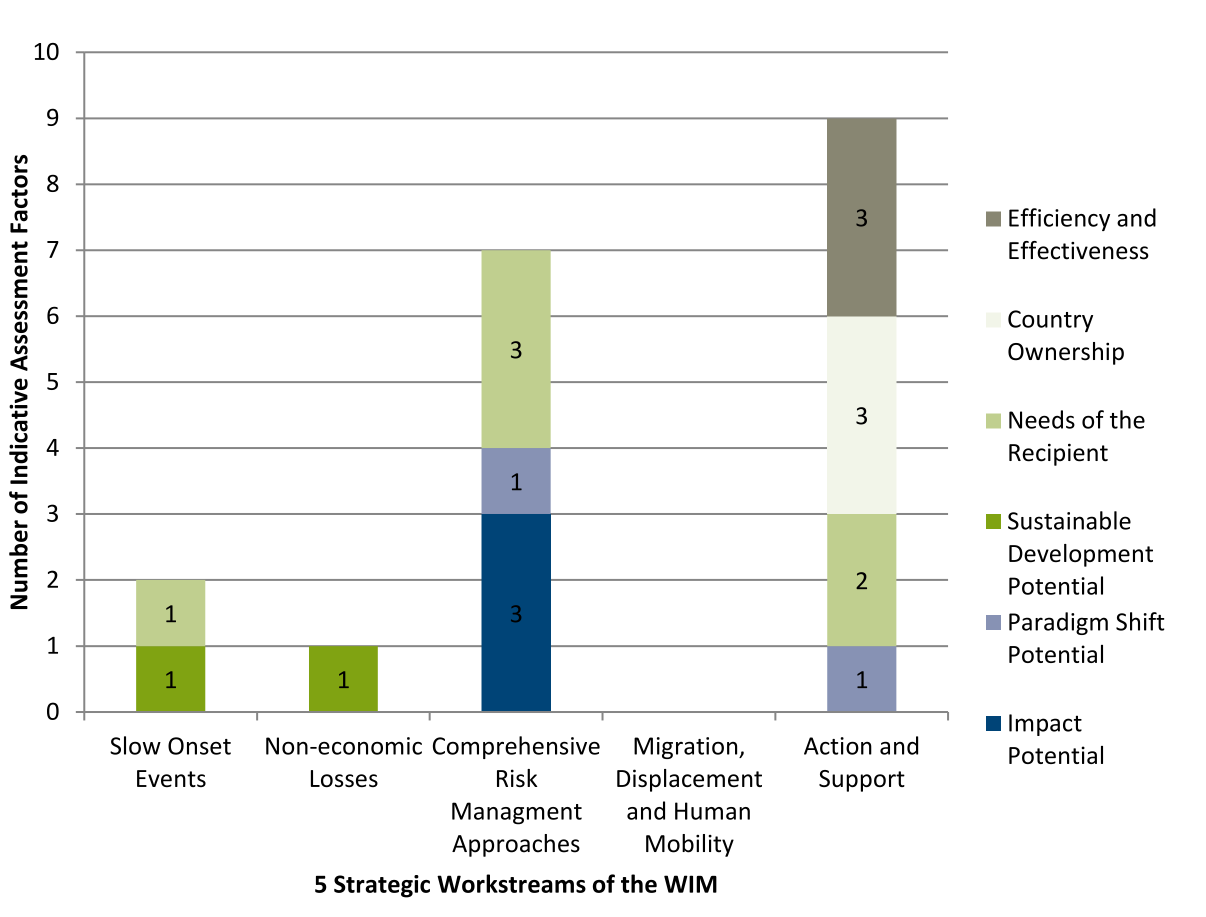
Source: GCF/B.09/23/ Decision B.09/05: GCF, Initial Investment Framework: activity-specific sub-criteria and indicative assessment factors, GCF Documentation

Based on the coverage areas, activity-specific sub-criteria and indicative assessment factors, our analysis found no issues that would prevent projects that avoid L&D from being eligible to receive GCF support. However, that does not mean that all investment criteria are relevant. We conducted an assessment of the investment criteria to determine to which extent the indicative assessment factors are relevant for the Workstreams (see Annex 3). Each assessment factor that was directly related to L&D terminology was categorised into which Workstream it most related to, and we found that the indicative assessment factors relate - implicitly or explicitly- primarily to Workstreams (3) comprehensive risk management; and (5) action and support (see Figure 2). The investment criteria most relevant for L&D are the needs of the recipient, country ownership, and efficiency and effectiveness.

The GCF emphasises 'transformational' and 'paradigm shift' approaches with key indicative assessment factors including climate risk management and social protection activities. Seven indicative assessment factors relate to comprehensive risk management approaches and these primarily sit within the needs of the recipient and impact potential. Nine indicative assessment factors relate to action and support, which can be explained by the breadth of this workstream: it covers finance, capacity building and stakeholder engagement. Similarly, the coverage areas under 'action and support' are reflected under the investment criteria under country ownership, efficiency and effectiveness and needs of the recipient. While none of the investment criteria pertain directly to (4) migration, displacement and human mobility, this does not mean that the GCF does not finance activities relating to this workstream. For example, FP036 in Cook Islands aims to decrease vulnerability to extreme climate events as a result of both internal and external migration and population growth.

The broader the workstream and the investment criteria, the more likely it becomes that projects that avoid L&D can be brought forward and financed by the GCF. However, as will be demonstrated in section 4.2, this might also be the reason why much of the GCF's financing for L&D actions has, to date, only been implicit.

Figure 2. Number of 'indicative assessment factors' per GCF Investment criterion related to the L&D Strategic Workstreams



Source: authors. See Annex II for the underlying analysis

4.2 Current funding for action on loss and damage under the GCF

In order to understand the opportunities for financing L&D actions under the GCF, an analysis of the current GCF portfolio has been undertaken. The software NVivo was used to search for terms/expressions in all of the 165 projects[88] that were approved by the GCF Board.[89] In a first step, we searched for the explicit mention of 'loss and damage"' and related terms, such as 'losses and damages', 'damage(s) and loss(es)', 'L&D' etc. We subsequently assessed terms specified in the five strategic workstreams of the WIM ExCom (see Table 1, Chapter 2) to screen the meanings and extract a few examples of how these terms have been used in the funding proposals. Searching for explicit mentions of L&D limits the methodology to an extent, as associated but not exact wording may be overlooked. Also, such a quantitative approach can miss specific aspects from the project narrative. The next section provides an analysis of the current GCF portfolio to determine the extent to which L&D is already being financed. The full methodology is detailed in Annex 4.

[88] This includes Funding Proposals (FPs) and projects under the Simplified Approval Process (SAP) approved by the GCF Board up to - and including - the Board Meeting of 9-13 November 2020 (B.27).
[89] Many projects are not under implementation yet and six projects have lapsed. However, for the highest level of representation we decided to include all projects approved by the GCF Board.

Occurrence of L&D-related terminology

The initial assessment observed the mentions of 'loss and damage' and related terminology – e.g. L&D, losses and damages, damage(s) and loss(es), LnD. We did not use a specific definition to judge proposals' approximation or deviation from what constitutes L&D, but accepted countries' references to the terminology(s) as sufficiently meaningful for this analysis. Excluding bibliographical references and contexts unrelated to climate change[90], we found that 40 of the 165 projects (24.2%) explicitly mention L&D, although 13 of these do so only as part of the background and baseline (see Figure 3)[91]. For example, projects refer to L&D from recent cyclones or floods to demonstrate the country's climate vulnerability (Box 2 provides an example).

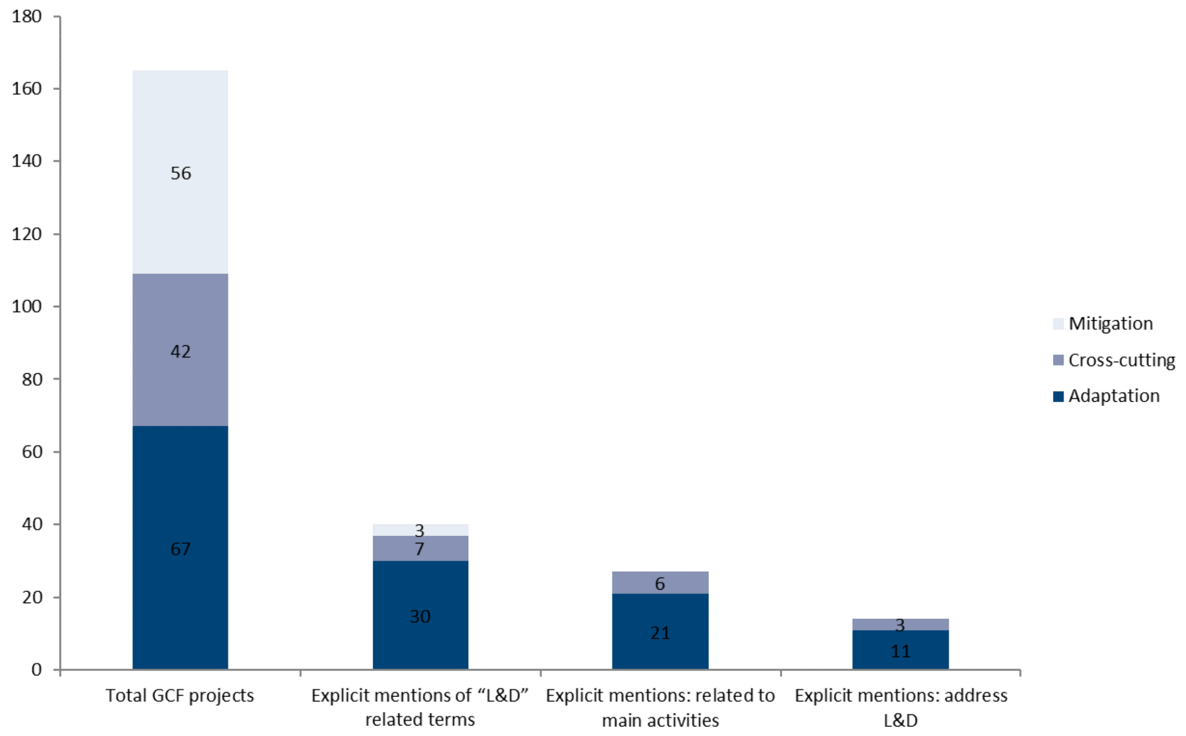
Box 2: Example of past L&D to demonstrate vulnerability

SAP011 Climate resilient food security for women and men smallholders through integrated risk management

Country:	Mozambique
Accredited Entity:	World Food Programme
Date of Submission:	June 2019
Funding Volume:	US$ 10 million (micro)

Cyclones Idai and Kenneth hit Mozambique in March and April 2019 and are mentioned in this proposal to demonstrate the country's vulnerability. Cyclones are an example of sudden-onset events that can cause major loss and damage. Project activities integrate climate risk management approaches, including watershed rehabilitation, climate resilient agriculture, and micro insurance, to promote adaptation among food insecure smallholders.

Figure 3. GCF project proposals explicitly mentioning and taking action on L&D



Source: coded by authors.

[90] For example, FP004 in Bangladesh, where "loss of or damage" appears in relation to the contractor's insurance ("loss of or damage to the works, plants and materials; loss of or damage to equipment").
[91] See for example projects FP016 in Sri Lanka; FP037 in Samoa; FP056 in Colombia; FP074 in Burkina Faso; FP076 in Cambodia; FP101 in Belize; FP122 in Madagascar, Mozambique, South Africa and Tanzania; SAP006 in Namibia; SAP010 in the Philippines; SAP011 in Mozambique.

We found that 27 projects explicitly use L&D-related terminology[92] linked to part of their main activities.[93] Even if diverging vastly on the content and depth, with some fully or mostly focused on the L&D component and others dealing with it as a single or smaller activity, these projects explicitly set themselves to avert, minimise and/or address L&D – or what proponent countries and project developers understand by L&D – in at least one of their goals. Most of the terminology appears in adaptation proposals (21 projects[94]), with the remaining (6[95]) labelled as cross-cutting. Of these 27 projects, 14[96] depart from the assumption that some L&D will occur and propose actions to specifically address and build resilience from these impacts.

All of the 27 projects with the explicit aim to avert, minimise and/or address L&D requested GCF finance in the form of grants, totalling US$ 902.5 million. However, some of these proposals go on to consider other financial instruments to ensure sustainability after the end of GCF funding (see Box 3). Two of these projects (FP084 in India and FP097 in Latin America) also requested a share of financing as loans (US$ 237.5 million and US$ 12.5 million, respectively). In terms of size, 17 of the approved projects are small, three micro, six medium and one large[97]. Two projects are classified as private: a large project encompassing multiple African countries with a cross-cutting theme[98] and a small adaptation project in multiple countries across Latin America[99].

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[92] See for example FP002 in Malawi; FP011 in Gambia; FP012 in Mali; FP012 in Vietnam; FP015 in Tuvalu; FP035 in Vanuatu; FP049 in Senegal; FP053 in Egypt; FP061 in Eastern Caribbean; FP066 in Marshall Islands; FP067 in Tajikistan; FP068 in Georgia; FP073 in Rwanda; FP084 in India; FP095 and FP097 in multiple countries; FP107 in Bhutan; FP109 in Timor Leste; FP113 in Kenya; FP118 in Nepal; FP125 in Vietnam; FP131 in Nepal; FP133 in Antigua and Barbuda; FP147 in the Pacific Islands; SAP002 in Kyrgyzstan; SAP008 in Bangladesh; SAP018 in Liberia.

[93] Some projects deal with L&D without explicitly referring to the concept. We conducted an additional analysis of keywords from the three topical workstreams of the WIM ExCom, namely on slow onset events, non-economic losses and human mobility. We subsequently coded projects that seek to avert, minimise and address issues such as acidification, sea level rise and (climate) impacts on cultural heritage as part of their goals, which can be found on the next item of this report.

[94] FP002 in Malawi, FP011 in Gambia, FP012 in Mali, FP015 in Tuvalu, FP035 in Vanuatu, FP049 in Senegal, FP053 in Egypt, FP061 in Antigua and Barbuda, Dominica, and Grenada, FP066 in Marshall Islands, FP067 in Tajikistan, FP068 in Georgia, FP097 in Guatemala, Honduras, Nicaragua, El Salvador, Panama, and Dominican Republic, FP107 in Bhutan, FP109 in Timor-Leste, FP113 in Kenya, FP125 in Viet Nam, SAP002 in Kyrgyzstan, SAP008 in Bangladesh; FP133 in Antigua and Barbuda; FP147 in the Pacific Islands; SAP018 in Liberia.

[95] FP013 in Viet Nam, FP073 in Rwanda, FP084 in India, FP095 in Morocco, Benin, Cameroon, Côte d'Ivoire, Egypt, Kenya, Mauritius, Namibia, Nigeria, South Africa, United Republic of Tanzania, Togo, Uganda, Ecuador, Senegal, Burkina Faso, Madagascar; FP118 in Nepal; FP131 in Nepal.

[96] See for example FP013 in Vietnam; FP015 in Tuvalu; FP035 in Vanuatu; FP049 in Senegal; FP061 in Eastern Caribbean; FP068 in in Georgia; FP073 in Rwanda; FP107 in Bhutan; FP109 in Timor Leste; FP113 in Kenya; FP131 in Nepal; FP132 in Georgia; FP147 in the Pacific Islands; SAP018 in Liberia.

[97] According to the GCF, projects can be classified according to their total value (in million US$) as micro (≤10), small (10<x≤50), medium (50<x≤250), and large (>250)

[98] FP095 in Africa

[99] FP097 in Latin America and the Caribbean

Box 3: Financial Instruments Relevant for Loss and Damage

The nature of many L&D projects lend them to grant finance as they typically provide public goods, which do not generate revenue. All of the 23 GCF projects that explicitly aim to avert, minimise and/or address L&D requested grant finance, primarily to enhance the climate resilience of vulnerable communities through, for instance, collecting and disseminating climate information. For example, **FP002 in Malawi** aims to invest in meteorological and hydrological capacities, provide tailored climate information and services and empower communities in preparedness and response to climate disasters through early warning systems and disaster risk reduction measures. In principle, fees could be charged for such services, but this is not envisaged under the main activities since the project targets the most vulnerable communities.

Private actors may also benefit from the provision of public goods, for instance in projects that allow them to continue their business as usual. For example, **FP053** aims to strengthen the Nile Delta region through creating sand dune dikes to reduce coastal flooding. No direct commercial revenue is generated through this activity, thus justifying grant finance.

Some of the GCF proposals also consider how the project may be sustainable following a GCF grant. For example, **FP125** aims to create partnerships among value chain stakeholders, including lenders, to ensure (future) access to markets and credit and graduate farmers from project funds. **FP013** aims to provide finance to poor coastal communities to build resilient homes. The project provides grant finance coupled with a concessional loan which must be met through the household's own resources or community contributions. Loan repayments are then used as a revolving fund to enable replication. **FP049** aims to establish and maintain a weather-index insurance scheme in partnership with a local agricultural insurance company. It compensates insurance holders in the case of rainfall deficits and prevents them from selling assets, while increasing their confidence to invest in agricultural inputs. **FP061** aims to strengthen institutional capacities and increase the resilience of targeted populations in pilot countries in the Eastern Caribbean. The project uses grants initially, but moves towards reimbursable grants, equity, concessional loans and guarantees. When a disaster hits, the revolving fund will provide flexible payment structures and funding, thus allowing homeowners and small business owners to continue to be productive and borrow from local banks.

These examples demonstrate that while projects request grant finance, subsidised loans or concessional finance and guarantees can also be used for L&D activities.

Box 4: Example of *Ex Ante* Loss and Damage

FP061 Integrated physical adaptation and community resilience through an enhanced direct access pilot in the public, private, and civil society sectors of three Eastern Caribbean small island developing states

Country (ies):	Antigua and Barbuda, Dominica, Grenada
Accredited Entity:	Department of Environment, Ministry of Health and the Environment, Antigua and Barbuda
Date of Submission:	July 2016
Funding Volume:	US$ 20 million (small)

The Eastern Caribbean islands of Antigua and Barbuda, Dominica and Grenada have witnessed large fiscal losses and significant negative constraints to economic growth due to natural disasters and slow onset climate events. The beneficiaries of FP061, homeowners and small business owners, are generally indebted due to past L&D, and cannot access credit at affordable rates. In addressing past L&D (*ex post* action), these private actors are unable to avert and minimise their risk to future L&D (*ex ante* action). This proposal demonstrates ex post L&D as justification for ex ante intervention.

We then analysed how the 27 projects relate to the timing of climate change-related impacts. The majority of the projects address expected future climate impacts related to L&D (ex ante measures), rather than already observable climate impacts (ex post). This suggests that approved projects have only dealt with averting and minimising future loss or damage, rather than addressing reconstruction or long term recovery phases of past climatic events, with the exceptions of projects FP061 (see Box 4 for more detail) and FP133.

In summary, those 27 projects that explicitly mention L&D-related terminology as part of their main activities have mostly sought funding for ex ante action on L&D, in the form of grant finance, are mostly public-sector based and generally refer to smaller-sized projects.

WIM ExCom's workstreams and the GCF portfolio

In a second step, we analysed all 165 approved proposals again to determine whether they included terminology used by the WIM in its five strategic workstreams. This can indicate projects taking action on L&D without mentioning it explicitly. The key areas of "comprehensive risk management" and "action and support" are very broad, and the related terminology appears in almost every project. However, this is typically to address the risks from project implementation to the GCF, or risks to the environment, indigenous communities or other stakeholders, rather than the risks of climate-related L&D. Only a few projects explicitly mention risk assessment in association with other L&D terms, such as the FP068 in Georgia, FP107 in Bhutan and FP147 in the Pacific Ocean. The three projects plan to collect ex post data on L&D to build a database for better managing the risks of future climate impacts. Subsequently, the analysis focused on the three remaining workstreams: slow onset events, non-economic losses and human mobility, which have shown a higher likelihood of being clearly related to L&D.

Out of the total 165 projects analysed with one or more terms related to slow onset events[100] (see Figure 4), the majority (in the light blue bubble) referred to forest degradation (134), land degradation (56) or sea level rise (82). However, only some of them explicitly aimed to address the effects (in the white bubble) of forest degradation (19), land degradation (56) and sea level rise (26). The remaining mentions are mostly used to indicate baselines and build the case for the country's vulnerability, provide examples of climate impacts, etc.

As an example of proposal that explicitly seeks to avoid the impacts of at least one slow onset event as part of its main activities, project FP035 in Vanuatu aims to assess the effects of acidification on coral reefs. Project SAP012 in Niger includes a deliverable on ecosystem-based adaptation (EbA) focused on fighting the slow-onset event of desertification. Most proposals on land and forest degradation relate to human-induced pressures rather than climate–related pressures. Many proposals also attach forest degradation to deforestation, without further specification. Loss of biodiversity is typically mentioned as an additional impact or co-benefit, but rarely considered as a key problem or addressed with specific activities. Glacial 'retreat' is only mentioned in FP040, but only as part of explaining the country's vulnerability baseline. Salinisation is particularly addressed by project FP003 in Senegal (see more detailed examples in Box 4).

[100] These are the terms indicated by the WIM ExCom, including: Rising temperature, (Ocean) Acidification, desertification, forest degradation, land degradation, loss of biodiversity, (glacial/glacier) retreat, salinisation, and sea level rise.

Box 5: Examples of Projects Explicitly Aiming to Avoid the Impacts of Slow Onset Events

FP018 Scaling up of Glacial Lake Outburst Flood (GLOF) risk reduction

Country:	Pakistan	Date of Submission:	August 2015
Accredited Entity:	United Nations Development Programme	Funding Volume:	US$ 37 million (small)

Glaciers in Northern Pakistan are melting due to rising temperatures. This is creating glacial lakes that may cause severe floods, resulting in "loss of lives, destruction of property and infrastructure, and severe damage to livelihoods." FP018 aims to upscale initiatives on early warning systems and local infrastructure. Although dealing with human and material losses from glacial lake outburst floods, the term "glacial retreat" is not explicitly used in the proposal and therefore it has not been included in the number of GCF approved projects taking action on glacial retreat (see Figure 4 and an explanation of our method in Annex 4).

FP049 Building the climate resilience of food insecure smallholder farmers through integrated management of climate risks

Country:	Senegal	Date of Submission:	June 2017
Accredited Entity:	World Food Programme	Funding Volume:	US$ 10 million (micro)

FP049 aims to support communities to prepare for and respond to climate-related disasters, including through weather index insurance, climate services and disaster risk reduction. It is an extension of the R4 Rural Resilience Initiative. The proposal uses L&D key words explicitly (including 'loss' and 'damage', and the slow onset event 'salinisation') and estimates the total cost of disasters in Senegal as US$36 million for direct L&D resulting from extreme weather events.

SAP001: Improving rangeland and ecosystem management practices of smallholder farmers under conditions of climate change

Country:	Namibia	Date of Submission:	December 2017
Accredited Entity:	Environmental Investment Fund	Funding Volume:	US$ 9,3 million (micro)

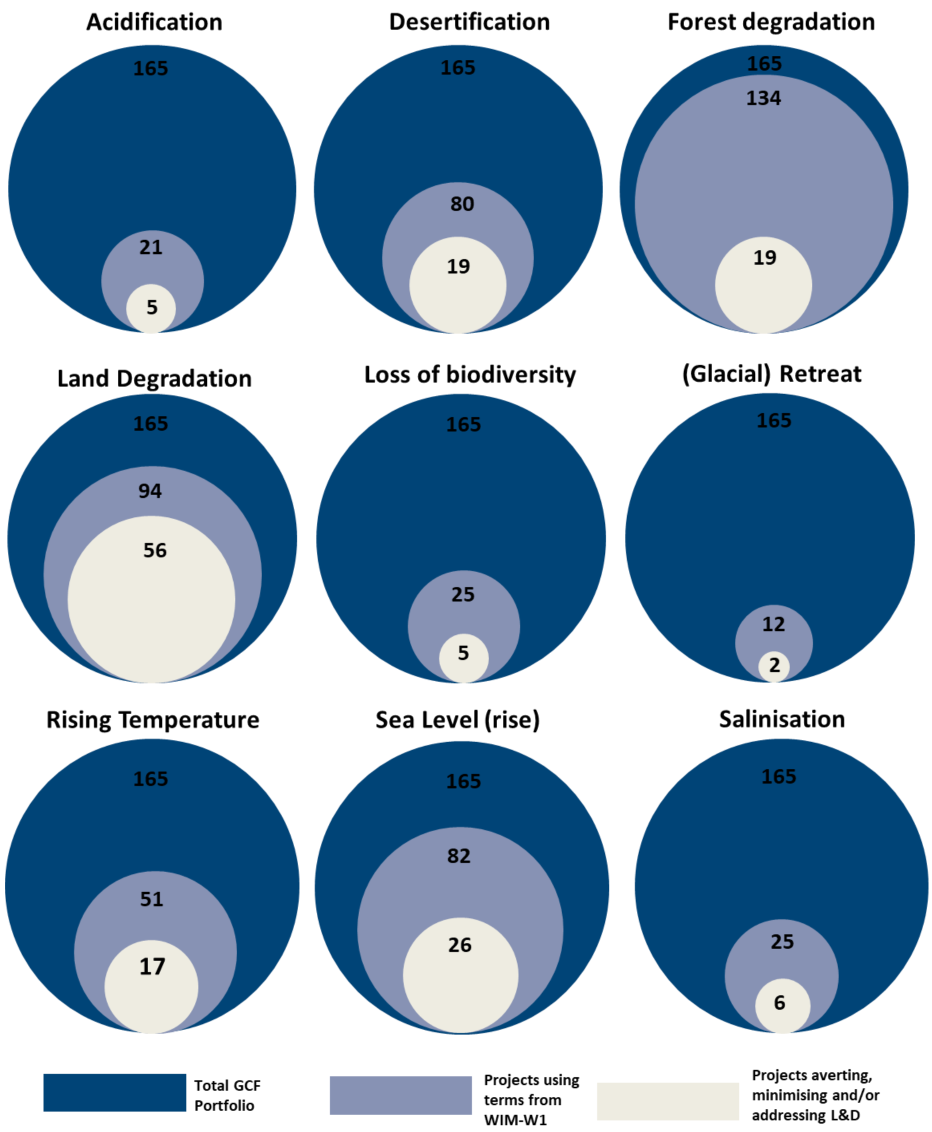
SAP001 is among the few proposals dealing directly with climate-related loss of biodiversity. It aims to implement biodiversity monitoring and management plans, as well as to support the establishment of biodiversity agroforestry in an attempt to halt the slow-onset event of loss of biodiversity due to increased dry seasons. It plans to do so by promoting climate-resilient technologies for agriculture and livestock, improving the dissemination of climate risk information, establishing an early warning system, and disseminating lessons learned.

While the term 'non-economic losses' is not used in project proposals, related terminology is, including cultural heritage, cultural identity, indigenous knowledge and loss of life. The terminology is used most frequently in relation to the risks caused by project implementation and compliance with GCF policies, such as the GCF Indigenous Peoples Policy. Out of 165 GCF projects only 65 projects refer to wording related to non-economic losses, with only 21 implicitly taking action on non-economic losses' terminology that directly relates to climate impacts, thus linking to L&D.[101] Other projects refer to non-economic losses from human activity or from project implementation.

[101] FP002 in Malawi, FP015 in Tuvalu, FP034 in Uganda, FP35 in Vanuatu, FP037 in Samoa, FP066 in the Marshall Islands, FP067 in Tajikistan, FP068 in Georgia, FP075 in Tajikistan, FP078 in Africa, FP84 in India, FP109 in Timor Leste, FP110 in Ecuador, FP113 in Kenya, FP118 in Nepal, FP120 in Chile, FP125 in Viet Nam, FP126 in Cuba, FP127 in Zimbabwe, SAP002 in Kyrgyzstan and SAP010 in the Philippines.

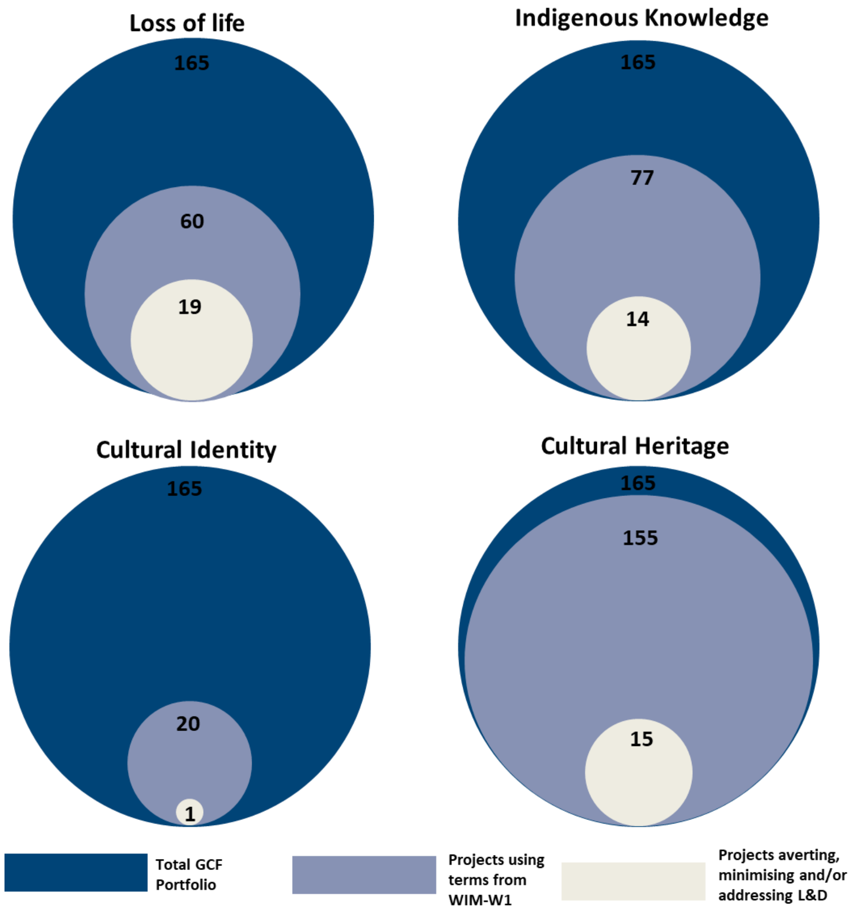
Figure **5** indicates the results of this analysis, bringing the total portfolio of GCF projects, the number of projects containing non-economic losses' related terminology and finally the smaller circle with the projects where this terminology directly relates with climate change and can be therefore linked to L&D. For example, the term loss of life appears in 60 projects, with only 19 projects dealing with it as an explanation of past climate events (ex post) and/or part of the project's main ex ante activities. Finally, non-economic losses can be described as issues with their own relevance, but they have been often referred together with terms related to economic losses. For example, many projects refer to 'loss of life' preceding or following an economic aspect, such as in "loss of life and assets" (e.g. FP002, FP034, FP067, SAP010) and 'loss of life and property' (e.g. FP018, FP084, SAP002).

Figure 4. Number of GCF approved projects taking action on WIM ExCom's workstream 1: Slow onset events



Source: coded by authors

Figure 5. Number of GCF approved projects taking action on WIM ExCom's workstream 2: Non-economic losses



Source: coded by the authors.

Human mobility is addressed in a heterogeneous way in the GCF's project proposals. Relevant terminology appears in 110 project proposals. However, most of these references are either used to construct a baseline, discuss displacement risks in the context of the potential impacts of the project implementation, are directly linked to human- rather than climate issues (e.g. conflicts) or are not directly linked to human mobility. As an example of the later, the term 'displacement' is more commonly used in the context of displacement of emissions rather than of communities or individuals. Nonetheless, FP091 in Kiribati and SAP008 in Bangladesh are specifically relate to human mobility. For example, project FP021 in Senegal plans the displacement and resettlement of people living in in flood-prone areas that cannot be protected by the drainage infrastructure, thereby assuming some limits to the project's core adaptation measures. In the case of migration, most projects tend to relate the term to climate impacts, with examples of project FP112 in Marshall Islands and FP077 in Mongolia, which address in and out seasonal migration between urban and rural areas that have vastly increased due to climate change. Other projects deal with the displacement of individuals, such as due to increased flash floods (FP012), internal displacement due to cyclone (FP015) and displacement of communities due to sea level rise (FP053).

Overall, our analysis of the GCF portfolio demonstrates that many projects address actions or finance related to L&D, albeit often implicitly. When assessing the strategic workstreams of the WIM, we show that many of the terms are currently used much more broadly and are linked to issues entirely unrelated to L&D, such as the management of risks occurring due to direct human pressures or due to project implementation. Relating to L&D, themes such as sea level rise have featured more prominently across the portfolio, although most themes from the strategic workstreams have been addressed in varying degrees by different projects. The absence of an L&D focus under the GCF may explain why projects aim to avoid L&D implicitly, and the next Chapter discusses a range of policy options on how the GCF could encourage projects to tackle L&D more explicitly.

5 Discussion and Conclusion

The UN climate negotiations in Madrid in 2019 provided a renewed focus on financing activities to avert, minimise and address L&D, including on how the GCF may contribute to this (see Box 1).

Until the guidance resulting from COP25, the GCF had no explicit mandate on L&D. The Governing Instrument, the initial Strategic Plan, the RMF and the investment criteria are not explicit on L&D. However, as our analysis demonstrates, 1) these pillars of the institutional set-up of the GCF already offer broad opportunities to integrate action on L&D into its projects; and 2) the GCF is already providing finance to avert and minimise L&D in particular. Almost a quarter of the GCF's approved projects explicitly mentions L&D, with 16% linking L&D to their main project activities.

The GCF is able to respond to the COP25 guidance in the sense that it can 'continue' to provide financial resources for activities relevant to averting, minimising and addressing L&D. This can be done in a manner that is consistent with the GCF's existing investment, results framework and windows and structures. However, the time needed both for entities to get accredited and for project proposals to be prepared, get approved by the Board and to start implementation is so long that a facilitation of 'efficient access' (also part of the guidance that resulted from COP25) will be difficult if no further decision on how to achieve this is taken. A number of other aspects also need to be taken into account.

The GCF portfolio 'balances' the allocation of resources between adaptation and mitigation activities. Chapters 2 and 3 show that L&D is more strongly related to adaptation than to mitigation; and Chapter 4 demonstrates that all of the approved GCF projects that integrate L&D in the main activities are either adaptation or cross-cutting. Therefore, without adjustments, most action on L&D will continue to be financed through the GCF's adaptation window.

GCF projects with activities to avert, minimise and address L&D are mostly grant based. However, this report also demonstrates that there are a number of financial instruments and tools that could avoid the risks of L&D, both ex ante and ex post. These include risk transfer schemes, catastrophe bonds, social protection schemes, and contingency finance. The GCF should consider using such instruments to leverage finance for L&D measures, rather than relying on grant finance only.

As Section 4.2 demonstrated, L&D-related terminology is often used in project proposals, but typically to build the project context, background and baseline, rather than to link L&D to their main activities. This may result from the lack of clear definitions and guidance in the current RMF and investment criteria. However, this lack of clarity also presents the greatest leverage and flexibility in project design for projects to integrate L&D. The Board should consider whether to make L&D more explicit in the RMF, or whether to continue to promote flexibility in project design.

However, the portfolio analysis demonstrates that the large majority of L&D related projects deal with expected future climate impacts (ex ante action) rather than already observable climate impacts or disasters. The GCF does not currently finance ex post action after disasters have hit, such as recovery. In this sense, 'averting' and 'minimising' L&D dominate the GCF's action on L&D, while 'addressing' L&D is done only to a limited extent.

Based on the portfolio and the institutional analyses, we provide below a menu of options for the GCF ranging from easier to more challenging to implement in terms of feasibility. The most straightforward options could be implemented right away, without major changes in the way the GCF is set up. The more far-reaching options would require an increasingly greater level of amendment of the GCF framework conditions and fundamental changes in the GCF's institutional set-up, such as with the establishment of a third funding window for L&D.

5.1. Range of policy options

The GCF has already included L&D terminology in its Updated Strategic Plan for 2020-2023, providing guidance to the GCF and signals priorities to all relevant actors. Within the current institutional set up there are a number of additional options for the GCF to become more proactive on L&D. Some of these options are comparably straightforward to implement and include:

- In order to facilitate more efficient access in line with the guidance resulting from COP25, **L&D could be made an explicit part of programme activities such as readiness activities**. This may include readiness funding for comprehensive risk assessments, capacity building in areas relevant to L&D, programming tools available from the GCF, etc. These would help to close information asymmetries and mitigate risk perceptions. The Readiness Programme could make grants for knowledge sharing and project preparation as well as available technology transfer, in order to support market creation, regulatory support and project pipeline development.[102] The GCF has an opportunity to use its Readiness Programme to give countries a signal to embrace L&D and include measures to avert, minimise and address L&D in their proposals.
- **More explicit and consistent inclusion of L&D in project proposals (FP and SAP).** Accredited Entities are primarily responsible for including or not L&D in their programming considerations. This could be promoted more proactively, as well as supported by other important actors such as National Designated Authorities (e.g. in developing Country Programmes and in developing their no-objection procedure) and the Secretariat (e.g. through country dialogues, readiness activities and when discussing options for improvement of drafts of project proposals). In this context, the 'Needs of the Recipient' is one of the most relevant investment criteria in relation to the five Strategic Workstreams of the WIM. For example, indicator 1.0 of the Adaptation PMF is 'increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions'[103]. Provided that an L&D project proposal adheres to that, then it could be approved for funding.
- The same actors (Accredited Entities, with support by National Designated Authorities and the Secretariat) could also consider to **broaden the financial instruments used to avert, minimise and address L&D in project proposals**, for example by including the instruments discussed by the SCF Forum: (1) risk transfer schemes; (2) catastrophe and resilience bonds; (3) social protection schemes; and (4) contingency finance[104] (see Table 2).

[102] (GCF, 2018)GCF, (2018)
[103] GCF, (2014)
[104] UNFCCC, (2019b)

- In order to support Accredited Entities to work on the two options above, the GCF Secretariat could build on this report's analysis of the portfolio of approved GCF projects, to create a catalogue of projects that have successfully integrated L&D in their main project activities, along with different factors that allowed them to do so.
- The GCF Secretariat and the Board should decide **what kind of approach the sectoral guidelines should take on L&D** in order to give a sense of what might be possible. For example, explicit inclusion of L&D terminology in the sectoral guidance that is currently under preparation; such as the sector guidance on 'early warning and climate information services', which has direct relevance for Workstream (c) on Comprehensive risk management approaches (see Table 1). L&D terminology could also be included in other sectoral guidance, in particular guidance related to adaptation.

By adopting one or more of the options above, the GCF's funding for measures to avert, minimise and address L&D is likely to increase over time. It is, however, questionable whether they will also allow the GCF to take measures on the full spectrum of L&D efficiently and to an extent that lives up to the requests and expectations of all members of the GCF Board.

The options below, are likely to be more difficult and would require more time to be implemented:

- **Develop a GCF policy on L&D that outlines what needs to be done for the GCF to identify, prioritise and support relevant measures to avert, minimise and address L&D**. Such a policy should address the guidance that resulted from COP25 (see Box 1) and provide guidance to Accredited Entities, National Designated Authorities, as well as other stakeholders on the role and commitment of the GCF in financing L&D related projects.
- The Board could decide to **issue a Request for Proposals on (addressing) L&D.** This would enhance the visibility of L&D as a strategic priority for the GCF, it would stimulate Accredited Entities for more explicit action in this space. Through issuing a Request for Proposals, the GCF may also accept proposals from entities that are not yet accredited, but that might have more expertise on L&D than the already accredited Entities. Such non-accredited Entities would have to team-up with Accredited Entities for formally submitting funding proposals to the GCF. Entities that submit proposals through the Requests for Proposals could be prioritised when applying for accreditation.

While the GCF was set-up to initially only have windows for adaptation and mitigation, the Governing Instrument provides the Board with the authority to 'add, modify and remove additional windows and substructures or facilities as appropriate'.[105] The Board could decide to use this authority in the case that the options provided above are insufficient and not effective enough.

- **Establishing a third and dedicated funding window** would further increase the GCF's potential to finance measures to avert, minimise and address L&D. At its 5th meeting, the Board decided that it would first make allocations to themes (mitigation or adaptation) and then to propose activities and programmes.[106] Adding a new window on L&D would be complicated as the Board would have to agree on the content of the window. As this report has shown, there is often a lack of clarity concerning the terminology around L&D and that fundamental disagreement still exists as to how

[105] GCF, (2011)
[106] GCF, (2013a)

L&D relates to adaptation. Furthermore, adding an L&D window would also have far-reaching implications for the wider set-up of the GCF. For example, the Board would need to consider how to address its aim for a 50:50 balance between mitigation and adaptation funding over time; whether its priority countries - least developed countries (LDCs), Small Island Developing States (SIDS) and/or African countries - could remain the same; and how a funding allocation of at least 50% of adaptation funding towards particularly vulnerable countries would need to be addressed in such a scenario. In addition, countries with other interests could request further thematic windows, for example for REDD+. As a consequence of adding a third window, the GCF would also need to reconsider its Results Management Framework and potentially its investment criteria.

- Even if all suggestions above are implemented, this might still not fully equip the GCF to address L&D in its full breath. For example, without ring-fencing some funds with their own – expedited – rules of disbursement, the GCF will still not be able to react quickly on extreme events and address L&D ex-post. That would require decision-making processes and criteria to be adjusted. This may include developing potential automatisms such as fund disbursement, assessing different structuring options (governance, administration), and/or allowing requests for funds to be submitted in advance, based on historical events or scientific forecasts and then when a trigger is hit. The GCF would also need to define the eligible activities, focus countries and trigger points. Considering financial instruments, the GCF would also need to determine the potential for risk transfer solutions. Therefore, while it's central to advance the discussion at the Board of how to fund and facilitate access to measures averting, minimising and addressing L&D, it would also be important to carry a strategic debate on the extent that GCF funding is desirable against the full breadth of L&D needs.

5.2. Recommendations

This report has demonstrated that a lack of agreement on the political level around key definitional aspects of L&D has not constrained the GCF from supporting L&D related activities. In particular, activities have been developed and should be strengthened for financing relevant measures for *averting* and *minimising* L&D, within the existing investment, results framework and funding windows and structures of the GCF. However, improvements should be considered, since the GCF has only a few activities so far that *address* L&D and access to funding should also be improved.

As a start, the GCF should move to implement a number of low-hanging fruit options in order to continue financing to avert, minimise and potentially address L&D in a more explicit and consistent way. Options such as integrating L&D in readiness activities, consistent inclusion of L&D in funding proposals, as well as inclusion of L&D in sectoral guidance can be implemented in a timely manner, with recipient countries retaining their strong ownership over the directions that individual projects may take. Financing for L&D could be developed for all different result areas, including mitigation-related ones as recommended by the AOSIS submission to the Updated Strategic Plan. By and large, the implementation of low-hanging fruit options will responds to the guidance provided by the COP (see Box 1). It also provides the GCF with an important role of demonstration, by implementing L&D related activities and collecting project-specific information regarding gaps, synergies and solutions for L&D activities. While this can deliver additional clarity for the development of L&D implementation strategies on country and regional levels, it may also support the political sphere of negotiations on the UNFCCC level.

Beyond the implementation of those low-hanging fruit options, the GCF Board might consider a more comprehensive, strategic and extensive discussion on the role and niche of the GCF in relation to the funding of the whole breadth of L&D measures. Given that the range of alternatives for L&D financing remain limited, the GCF might play a catalytic role in innovation for funding such measures. In this context, more intricate and potentially normative options such as a policy on L&D and/or a dedicated request for proposals might be relevant at a later point in time. Such options would require the consolidation of a clearer definition of L&D, in particular on its relation with adaptation. This poses a risk for the advancement of L&D financing within the GCF, considering that a consensus on a definition has not been reached in other forums.

If the Board were to agree that even a dedicated policy on L&D and the other options provided above would provide insufficient, more far-reaching alternatives can be thought of that would go beyond the current guidance from the COP. For example, the creation of a third funding window on L&D, in addition to mitigation and adaptation, could in theory maximise the GCF financing to L&D-related measures. However, such an option would demand a fundamental renegotiation and renewal of GCF’s foundation, with consequences for allocation targets in terms of funding balance between adaptation and mitigation, as well as for the commitment across countries, with particular impact to different types of priority countries. Based on our research, as well as on the uncertainty from such a reform regarding the delivery of positive outcomes for L&D as much as for adaptation and mitigation, this report’s recommendation goes against the development of a third funding window.

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Annex 1: The Warsaw International Mechanism for Loss and Damage

The WIM L&D Mechanism promotes *implementation of approaches* to address L&D by undertaking the following functions:

1. Enhancing knowledge and understanding of comprehensive risk management approaches to address L&D associated with the adverse effects of climate change, including slow onset impacts, by facilitating and promoting:
    - Action to address gaps in the understanding of and expertise in approaches to address loss and damage associated with the adverse effects of climate change, including, inter alia, the areas outlined in decision 3/CP.18, paragraph 7(a);
    - Collection, sharing, management and use of relevant data and information, including gender-disaggregated data;
    - Provision of overviews of best practices, challenges, experiences and lessons learned in undertaking approaches to address loss and damage.
2. Strengthening dialogue, coordination, coherence and synergies among relevant stakeholders by:
    - Providing leadership and coordination and, as and where appropriate, oversight under the Convention, on the assessment and implementation of approaches to address loss and damage associated with the impacts of climate change from extreme events and slow onset events associated with the adverse effects of climate change;
    - Fostering dialogue, coordination, coherence and synergies among all relevant stakeholders, institutions, bodies, processes and initiatives outside the Convention, with a view to promoting cooperation and collaboration across relevant work and activities at all levels.
3. Enhancing action and support, including finance, technology and capacity-building, to address loss and damage associated with the adverse effects of climate change, to enable countries to undertake actions, pursuant to 3/CP.18 (para. 6) including by:
    - Providing technical support and guidance on approaches to address loss and damage associated with climate change impacts, including extreme events and slow onset events;
    - Providing information and recommendations for consideration by the Conference of the Parties when providing guidance relevant to reducing the risks of loss and damage and, where necessary, addressing loss and damage, including to the operating entities of the financial mechanism of the Convention, as appropriate;
    - Facilitating the mobilization and securing of expertise, and enhancement of support, including finance, technology and capacity-building, to strengthen existing approaches and, where necessary, facilitate the development and implementation of additional approaches to address loss and damage associated with climate change impacts, including extreme weather events and slow onset events.

Annex 2: An Overview of Investment Support Instruments Relevant for L&D

The Governing Instrument states that the GCF will provide financing in the form of grants and concessional lending, and through 'other modalities, instruments or facilities as may be approved by the Board'.[107]

Broad types of action are required in averting, minimising and addressing L&D, depending on "the dimension of risk management being sought, the type of L&D to be avoided, the type of climate event(s) that result in, or may result in, the L&D, and the level at which action is taken or finance is directed."[108]

A number of investment support instruments are relevant for financing measures to avert, minimise and address L&D. Here, we provide an overview of the main financial instruments, including those identified by the SCF Forum and given in the UNFCCC Technical Paper on '…*Financial Support for Addressing L&D'.* This overview is not exhaustive.

Grants are payments tied to a specific investment, which can be flexibly coupled to the project requirements.[109] Grants are a commonly applied financial tool for L&D activities[110], and cover multiple risk management approaches. Grants can fund part of the investments related to L&D, which can help to reduce its financial cost and increase its competitiveness. Upfront grants can play an important role with regard to risk-sharing during the high risk early stage of project development or Research and Development (R&D) in new technologies. As a result, grants can improve the cost structure of a project and in turn improve its financial viability. According to the analysis in this paper, grants are the only financial instrument requested from the GCF in L&D related proposals.

Concessional loans use public money to extend loans for projects at more favourable conditions (maturity, interest, seniority) than commercial loans available on the market.[111] Concessionality is achieved through reduced interest rates or long grace periods; however, such loans also need to be specified in terms of number of potential interest-free years at the beginning and the seniority relative to other loans. Concessional loans as a type of disaster finance are often contingent on existing disaster risk reduction programmes. For example, the Development Policy Loan with a Catastrophe Deferred Drawdown Option (Cat DDO) is a contingent financing line that provides immediate liquidity to countries following a natural disaster. It provides early financing while other funds are being mobilised.[112] An alternative to a concessional loan are **interest subsidies**, whereby the government, rather than directly providing a loan, offers a subsidy on the interest paid by the borrower. In effect, part of the interest repayment is taken over by the government.

Equity fulfils a guarantee/liability function for debt investors. Equity investors accept a higher risk than debt investors and consequently return expectations are higher. In addition to this, their investment

[107] GCF (2011)
[108] UNFCCC, (2019), *Elaboration of the sources of and modalities for accessing financial support for addressing loss and damage,* Technical Paper by the secretariat, FCCC/TP/2019/1
[109] Kempa, K., and U. Moslener, (2017)
[110] UNFCCC, (2019), *Elaboration of the sources of and modalities for accessing financial support for addressing loss and damage,* Technical Paper by the secretariat, FCCC/TP/2019/1
[111] Kempa, K., and U. Moslener, (2017)
[112] World Bank, (2018), IDA Catastrophe Deferred Drawdown (Cat DDO), Cat DDO Product Note

does not have a maturity. Their return depends on the company's ability to generate profits. Typically, equity investors receive voting rights, i.e. they can vote on candidates for the company's management as well as certain strategic decisions. The GCF, for example, invests early stage equity, thereby de-risking the project aiming to catalyse much larger private sector financing.

Risk transfer and **risk pooling**, and **index-based schemes**, allow risk holders to spread losses widely across time, stakeholders and geographically[113]. When risks cannot be reduced, risk transfer instruments such as insurance allow risk holders to transfer some of their financial risk to the insurer at a premium. Donor support could, for example, be used for the initial capitalisation of risk pools. Financing paid into risk transfer approaches could take the form of direct funding that targets insurance-related administrative costs in government, thereby minimising distortion of loss prevention incentives.[114]

Risk transfer schemes such as **risk layering analysis** separates risks based on the probability of frequency and severity. For example, high frequency low severity risks might be addressed through preventative and risk reduction activities. More severe, less frequent events may be transferred through private and/or public insurance mechanisms. "The loss and damage that remains once all feasible measures are taken (i.e. residual risk) requires several approaches, such as strengthening institutional arrangements and socio-economic policies or relocation of populations, flood control investments or disaster relief funds."[115]

Green bonds are debt securities linked to climate change that aim to increase the supply of climate finance from private sector investors. They can provide finance for mitigation and adaptation-related projects. Issuers of green bonds can be public or private entities: governments, climate/development finance institutions, multi-national banks or corporations. The bonds can have any structure (senior unsecured, asset-backed, covered bond, loans, etc.) and largely function as conventional debt securities. They are analysed based on the creditworthiness of the issuer, and, market conditions permitting, are tradable in the secondary bond markets. Green bonds are specifically earmarked to be used for climate and environmentally sustainable projects. The greenness of a bond is defined by the project the proceeds are financing and not by the issuer. With the development of sustainable finance and the increasing integration of climate-related risks into portfolio management, green bonds offer investors a green investment opportunity with limited risks and fears (since bonds are instruments that they understand well), consequently reducing the opportunity costs related to innovative financing structures. In some cases, green bonds feature tax incentives.

Catastrophe risk insurance at national or regional levels protects against low-probability, high-cost events.[116] **Catastrophe bonds** transfer risks to the capital market, thereby spreading them widely. They

[113] Executive Committee of the WIM, (2016), *Best Practices, Challenges and Lessons Learned from Existing Financial Instruments at all Levels that Address Risk of Loss and Damage Associated with the Adverse Effects of Climate Change*, Information Paper, https://unfccc.int/sites/default/files/aa7_d_information_paper.pdf
[114] Durand et al., (2016)
[115] Executive Committee of the WIM, (2016), *Best Practices, Challenges and Lessons Learned from Existing Financial Instruments at all Levels that Address Risk of Loss and Damage Associated with the Adverse Effects of Climate Change*, Information Paper, https://unfccc.int/sites/default/files/aa7_d_information_paper.pdf
[116] Executive Committee of the WIM, (2016), *Best Practices, Challenges and Lessons Learned from Existing Financial Instruments at all Levels that Address Risk of Loss and Damage Associated with the Adverse Effects of Climate Change*, Information Paper, https://unfccc.int/sites/default/files/aa7_d_information_paper.pdf

have mainly been issued by macro-level risk pooling facilities for reinsurance, but are increasingly being taken into consideration by public entities as a risk-sharing mechanism as they provide immediate financial relief by enabling liquidation of the capital immediately after an extreme event.

Social protection schemes are policies designed to reduce people's exposure to risks, enhancing their capacity to protect themselves against hazards and loss of income and are usually channelled through national government funds.[117] Efforts may include integrating climate information into social protection decision-making to help make countries, regions and communities more responsive to climate disasters, safety net programmes such as the R4 Rural Resilience Initiative (Senegal FP049, see Box 5) and livelihood diversification.

Contingency finance is fast-disbursing finance, which, in the event of a natural disaster declared a national emergency by the government, provides lines of credit.[118] Funds are used for early response and recovery measures. International relief providers such as the World Food Programme, and regional risk pooling schemes such as the African Risk Capacity (ARC) combine multiple tools to respond to urgent financial needs and enable finance to flow to those who most need it in the aftermath of a disaster. International assistance through appeals is secured on an ad hoc basis following a disaster and governments have no choice but to reallocate national budgets to crisis response. Therefore, contingent funds such as the ARC can facilitate longer-term investments to disaster risk reduction and climate resilience.[119]

Public guarantees to loans are typically used to lower the financing costs for a specific project. If a lender (e.g. a bank) receives a guarantee for a loan or against some risks, those risks are reduced and consequently there may be a lower risk-premium on the interest rate, provide a higher loan amount or provide a loan at all.[120] Guarantees are not direct financing as such but, by offering protection against the associated risks, make it possible to mobilise commercial financing for projects including L&D. Guarantees do not usually cover the full loan but rather portion of the losses to the financier in the event of specified events. Events are specified in order to ensure full due diligence is carried out, and may relate to protection against extreme losses, or the expectation to better manage risks over time.

Debt Swaps are where debt is cancelled either in part or in full by certain creditors, for example donor countries, against the commitment of the debtor to use the outstanding value for a certain investment.[121] Debt swaps may be used to build a financial buffer in order to address residual risks, or may be tied to the improvement of a countries' physical resilience. In 2015, the IMF set up the Catastrophe Containment and Relief Trust (CCRT), which allows the IMF to provide grants for debt relief to the most vulnerable countries hit by catastrophic natural disasters. This relief on debt service

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[117] Executive Committee of the WIM, (2016), *Best Practices, Challenges and Lessons Learned from Existing Financial Instruments at all Levels that Address Risk of Loss and Damage Associated with the Adverse Effects of Climate Change*, Information Paper, https://unfccc.int/sites/default/files/aa7_d_information_paper.pdf

[118] World Bank, (2014), *A Landmark First for Africa: Seychelles Uses Contingent Credit for Disasters*, Feature Story, http://www.worldbank.org/en/news/feature/2014/10/15/a-landmark-first-for-africa-seychelles-uses-contingent-credit-for-disasters

[119] African Risk Capacity, (accessed 2020)

[120] Kempa, K., and U. Moslener, (2017)

[121] Fuller, F., Zamarioli, L., Kretschmer, B., Thomas, A., and L. De. Marez, (2018), *Debt for Climate Swaps: Caribbean Outlook*, Berlin

payments allows additional resources to be used to balance payments created by the disaster and to ensure the recovery phase can begin.

In the case of (climate change-related) extreme weather events, **disaster relief funds** can be quickly disbursed for response and recovery.[122] All priority areas under the Sendai Framework have linkages to the actions for addressing L&D that require financing as identified under the Suva Expert Group. For example, the Global Facility for Disaster Reduction and Recovery (GFDRR) is a grant-funding mechanism managed by the World Bank. It contributes to the implementation of the Sendai Framework by helping countries integrate disaster risk management and adaptation into development strategies and investment programmes, thus allowing countries to respond more swiftly when disaster strikes, building resilience ex ante and around the concept of 'build back better'.[123] The GFDRR also launched a Climate Risk and Early Warning Systems initiative (CREWS), together with the World Meteorological Organisation (WMO), the United Nations Office for Disaster Risk Reduction and the Government of France to finance weather stations, radar facilities and early warning to strengthen multi-hazard early warning systems in SIDS and LDCs.[124]

Considering ex ante finance, **forecast-based finance** is a (new) type of humanitarian assistance for addressing L&D from sudden onset, extreme events. It seeks to provide an alternative to post-crisis disaster response.[125] It was developed by the Red Cross Red Crescent and its partners as a mechanism whereby humanitarian funding is released to take anticipatory pre-defined actions after a forecast is issued and before a potential disaster strikes.[126] Answering emergency appeals is almost exclusively grant financed.

Risk management tools such as **insurance** support individuals, businesses, and governments in dealing with the impacts of climate-related catastrophes. Climate risk insurance provides timely and reliable finance for relief and recovery in the aftermath of a disaster, thereby reducing long-term secondary socioeconomic consequences. Depending on the type of catastrophe and the level of economic development, insurance coverage can help beneficiaries faster and more efficiently than aid programmes.[127] However, in the context of L&D, it is essential to ensure that risk insurance is "integrated with risk reduction efforts and embedded in a comprehensive climate risk management strategy."[128]

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[122] Executive Committee of the WIM, (2016), *Best Practices, Challenges and Lessons Learned from Existing Financial Instruments at all Levels that Address Risk of Loss and Damage Associated with the Adverse Effects of Climate Change*, Information Paper, https://unfccc.int/sites/default/files/aa7_d_information_paper.pdf

[123] Global Facility for Disaster Reduction and Recovery, (2020), https://www.gfdrr.org/en/global-facility-disaster-reduction-and-recovery

[124] Climate Risk and Early Warning Systems initiative, 2020, https://www.crews-initiative.org/en

[125] Coughlan de Perez et al (2015) Forecast-based financing: an approach for catalyzing humanitarian action based on extreme weather and climate forecasts, in: Natural Hazards Earth System Sciences 15, pp. 1-10

[126] GRC (2017) Policy paper: Closing the gap: reconciling short-term disaster response with long-term risk reduction through forecast-based finance (FBF), available at: https://www.drk.de/fileadmin/user_upload/PDFs/Hilfe_weltweit/final_policy_paper_Fbf_print.pdf

[127] Munich RE, (2018), TOPICS Geo: Natural Catastrophes 2017: Analyses, assessments, positions

[128] Hoeppe, 2016, in: Durand, A., et al., (2016), *Financing Options for Loss and Damage: A Review and Roadmap*, DIE Discussion Paper 21/2016

Annex 3. Extent to which the GCF investment criteria's indicative assessment factors are relevant for the WIM ExCom Workstreams

For the WIM ExCom Workstreams, see Table 1, Chapter 2

Criteria	Coverage Area	Activity-specific sub-criteria	Indicative Assessment Factors	Workstream and Relevance (N/A: Not Applicable; Orange: Relevant; Green: Highly Relevant)
Impact potential	Adaptation Impact	Contribution to increased climate-resilient sustainable development	Expected total number of direct and indirect beneficiaries, (reduced vulnerability or increased resilience); number of beneficiaries relative to total population (PMF-A Core 1), particularly the most vulnerable groups	N/A
			Degree to which the activity avoids lock-in of long-lived, climate-vulnerable infrastructure	N/A
			Expected reduction in vulnerability by enhancing adaptive capacity and resilience for populations affected by the proposed activity, focusing particularly on the most vulnerable population groups and applying a gender-sensitive approach	N/A
			Expected strengthening of institutional and regulatory systems for climate-responsive planning and development (PMF-A 5.0 and related indicator(s))	3
			Expected increase in generation and use of climate information in decision-making (PMF-A 6.0 and related indicator(s))	3 "use of climate information in decision-making" is generally relevant to the L&D
			Expected strengthening of adaptive capacity and reduced exposure to climate risks (PMF-A 7.0 and related indicator(s))	N/A
			Expected strengthening of awareness of climate threats and risk-reduction processes (PMF-A 8.0 and related indicator(s)); and/or Other relevant indicative assessment factors, taking into account the Fund's objectives, priorities and result areas, as appropriate on a case-by-case basis	3
Paradigm Shift Potential	Potential for knowledge and learning	Contribution to the creation or strengthening of knowledge, collective learning processes, or institutions	Existence of a monitoring and evaluation plan and a plan for sharing lessons learned so that they can be incorporated within other projects	5 "enhanced cooperation and facilitation in relation to action and support"
	Contribution to the creation of an enabling environment	Sustainability of outcomes and results beyond	Arrangements that provide for long-term and financially sustainable continuation of relevant outcomes and key	N/A

		completion of the intervention Market development and transformation	relevant activities derived from the project/programme beyond the completion of the intervention Extent to which the project/programme creates new markets and business activities at the local, national or international levels	
	Contribution to the regulatory framework and policies	Potential for strengthened regulatory frameworks and policies to drive investment in low-emission technologies and activities, promote development of additional low-emission policies, and/or improve climate-responsive planning and development	Degree to which the project or programme advances the national/local regulatory or legal frameworks to systemically promote investment in low-emission or climate-resilient development	N/A
			Degree to which the activity shifts incentives in favour of low-carbon and/or climate-resilient development or promotes mainstreaming of climate change considerations into policies and regulatory frameworks and decision-making processes at national, regional and local levels, including private-sector decision-making	3 "methodologies to enhance the understanding of CRM approaches to be made accessible to and used by national governments."
	Overall contribution to climate-resilient development pathways consistent with a country's climate change adaptation strategies and plans (adaptation only)	Potential for expanding the proposal's impact without equally increasing its cost base (scalability) Potential for exporting key structural elements of the proposal to other sectors, regions or countries (replicability)	Scaling up the scope and impact of the intended project/programme without equally increasing the total costs of implementation A theory of change for replication of the proposed activities in the project/programme in other sectors, institutions, geographical areas or regions, communities or countries Degree to which the programme or project reduces proposed risks of investment in technologies and strategies that promote climate resilience in developing countries	N/A
Sustainable Development Potential	Environmental co-benefits	Expected positive environmental impacts, including in other result areas of the Fund, and/or in line with the priorities set at the national, local or sectoral level, as appropriate	Degree to which the project or programme promotes positive environmental externalities such as air quality, soil quality, conservation, biodiversity, etc.	1 "including desertification, glacial retreat and related impacts, land and forest degradation, **loss of biodiversity**, ocean acidification, increasing temperatures and sea level rise"
	Social co-benefits	Expected positive social and health impacts, including in other result areas of the Fund,	Potential for externalities in the form of expected improvements, for women and men as relevant, in areas such	2

		and/or in line with the priorities set at the national, local or sectoral levels, as appropriate	as health and safety, access to education, improved regulation and/or cultural preservation	"as well as loss or degradation of territory, **cultural heritage, indigenous knowledge, societal/cultural identity biodiversity**, and ecosystem services"
	Economic co-benefits	Expected positive economic impacts, including in other result areas of the Fund, and/or in line with the priorities set at the national, local or sectoral level, as appropriate	Potential for externalities in the form of expected improvements in areas such as expanded and enhanced job markets, job creation and poverty alleviation for women and men, increased and/or expanded involvement of local industries; increased collaboration between industry and academia; growth of private funds attracted; contribution to an increase in productivity and competitive capacity; improved sector income-generating capacity; contribution to an increase in energy security; change in water supply and agricultural productivity in targeted areas, etc.	N/A
	Gender-sensitive development impact	Potential for reduced gender inequalities in climate change impacts and/or equal participation by gender groups in contributing to expected outcomes	Explanation of how the project activities will address the needs of women and men in order to correct prevailing inequalities in climate change vulnerability and risks	N/A
Needs of the Recipient	Vulnerability of the country (adaptation only)	Scale and intensity of exposure of people, and/or social or economic assets or capital, to risks derived from climate change	Intensity of exposure to climate risks and the degree of vulnerability, including exposure to slow onset events Size of population and/or social or economic assets or capital of the country exposed to climate change risks and impacts	1 "Activities under this strategic workstream aim at improving the understanding of slow onset events, as well as enhancing the capacity of address them, particularly at regional and national levels"
	Vulnerable groups and gender aspects (adaptation only)	Comparably high vulnerability of the beneficiary groups	Proposed project/programme supports groups that are identified as particularly vulnerable in national climate or development strategies, with relevant sex disaggregation	3 "Social protection instruments, including social safety nets"
	Economic and social development level of the country and the affected population	Level of social and economic development of the country and target population	Level of social and economic development (including income level) of the country and target population (e.g. minorities, disabled, elderly, children, female heads of households, indigenous peoples, etc.)	3 "Social protection instruments, including social safety nets"
	Absence of alternative sources of financing	Opportunities for the Fund to overcome specific barriers to financing	Explanation of the existing barriers that create absence of alternative sources of financing and how they will be addressed	5 Under the Action and Support workstream alternative financial sources are created to finance

				L&D related activities such as contingency finance, climate-themed bonds, catastrophe bonds etc.
	Need for strengthening institutions and implementation capacity	Opportunities to strengthen institutional and implementation capacity in relevant institutions in the context of the proposal	Potential of the proposed programme or project to strengthen institutional and implementation capacity	3 Facilitating stakeholder engagement and capacity building, including for enhanced observation and risk assessment. Facilitating the development of guidance, as appropriate, for creating comprehensive risk profiles, risk management strategies and approaches, and climate risk insurance solutions. Collecting awareness-raising strategies, related knowledge products and methodologies to enhance the understanding of CRM approaches to be **made accessible to and used by national governments**. 5 "engaging stakeholders to develop knowledge and support the dissemination of best practices to effectively plan and prepare for and respond to loss and damage" "**capacity-building** for addressing loss and damage and inviting relevant actors to support their implementation."
Country Ownership	Existence of a national climate strategy Coherence with existing policies	Objectives are in line with priorities in the country's national climate strategy Proposed activity is designed in cognizance of other country policies	Programme or project contributes to country's priorities for low-emission and climate-resilient development as identified in national climate strategies or plans, such as nationally appropriate mitigation actions (NAMAs), national adaptation plans (NAPs) or equivalent, and demonstrates alignment with technology needs assessments (TNAs), as appropriate Degree to which the activity is supported by a country's enabling policy and institutional framework, or includes policy or institutional changes	5 "inviting the Paris Committee on Capacity Building and other relevant agencies to identify capacity gaps and recommend ways to address the gaps; inviting relevant actors to organize regional stakeholder workshops to build capacity" "inviting relevant actors to continue developing insurance mechanisms, as appropriate,

				embedded in an integrated risk management approach"
	Capacity of accredited entities or executing entities to deliver	Experience and track record of the Accredited Entity or executing entities in key elements of the proposed activity	Proponent demonstrates a consistent track record and relevant experience and expertise in similar or relevant circumstances as described in the proposed project/programme (e.g. sector, type of intervention, technology, etc.)	5 "Capacity of accredited entities or executing entities to deliver" is generally relevant to the opportunity to finance L&D
	Engagement with civil society organizations and other relevant stakeholders	Stakeholder consultations and engagement	Proposal has been developed in consultation with civil society groups and other relevant stakeholders, with particular attention being paid to gender equality, and provides a specific mechanism for their future engagement in accordance with the Fund's environmental and social safeguards and stakeholder consultation guidelines. The proposal places decision-making responsibility with in-country institutions and uses domestic systems to ensure accountability	5 "engaging stakeholders to develop knowledge and support the dissemination of best practices to effectively plan and prepare for and respond to loss and damage"
Efficiency and effectiveness	Cost-effectiveness and efficiency regarding financial and non-financial aspects	Financial adequacy and appropriateness of concessionality	Proposed financial structure (funding amount, financial instrument, tenor and term) is adequate and reasonable in order to achieve the proposal's objectives, including addressing existing bottlenecks and/or barriers Demonstration that the proposed financial structure provides the least concessionality needed to make the proposal viable	5 "proposed financial structure" falls generally under financing instruments
	Programme/project financial viability and other financial indicators	Expected economic and financial internal rate of return Financial viability in the long run	Economic and financial rate of return with and without the Fund's support (i.e. hurdle rate of return or other appropriate/relevant thresholds) Description of financial soundness in the long term (beyond the Fund's intervention)	5 Example: GCF FP113 requested concessional loan to create community-owned and managed revolving funds as a complement to grant schemes to private sector enterprises
	Industry best practices	Application of best practices and degree of innovation	Explanations of how best available technologies and/or best practices, including those of indigenous peoples and local communities, are considered and applied If applicable, the proposal specifies the innovations or modifications/adjustments made based on industry best practices	5 "Stakeholder engagement: engaging stakeholders to develop knowledge and support the dissemination of best practices to effectively plan and prepare for and respond to loss and damage; and inviting relevant actors to continue developing insurance mechanisms, as appropriate, embedded in an integrated risk management approach."

Annex 4. Methods used for section 4.2

The methodological approach was an iterative process comprising three major steps. First, a set of terminology related to L&D was determined. Second, the proposals submitted to the GCF were downloaded and a qualitative content analysis was undertaken using NVivo 12 software. Finally, the results from NVivo were analysed manually to ascertain inferences to L&D.

Terminology

To initiate the content analysis, relevant synonyms to Loss and Damage were identified a priori based on the review of negotiation texts and literature (see Chapters 2 and 3) (see Table 4).

Table 4: Loss and Damage related Terminology

Loss[es]	Damage[s]
Loss[es] and Damage[s]	Damage[s] and Loss[es]
Loss[es] n Damage[s]	Damage[s] n Loss[es]
LnD	L&D

At this stage, we did not assess whether usage of such terms fit any particular definition of L&D, but rather accepted proponents' own choice to include the terms in submitted projects as sufficiently relevant.

Key words relating to L&D were identified using the framework of the *WIM Approaches to Address L&D Associated with Climate change Impacts in Developing Countries* (see Table 5). An initial analysis was undertaken for key words from all five Strategic Workstreams; however, analysis on two Workstreams ('comprehensive risk management' and 'action and support') were discontinued as the analysis did not yield relevant findings. Related terms such as "risk assessment", "finance" and "capacity building" are mandatory elements of a GCF proposal and therefore usage of such terms was too varied and dispersedly covered within the proposals and generally not related to L&D.[129]

Table 5: Key Words related to Loss and Damage

	WIM workstreams		
	Slow onset events	**Non-economic losses**	**Human mobility**
Key Words from Workstream	Acidification	Cultural heritage	Displac*
	Desertification	Cultural identity	Migration
	Forest degradation	Indigenous people	[Planned] relocation
	Land degradation	Loss of life	
	Biodiversity		
	[Glaci*] retreat		
	Rising temperature		
	Salini-z/s-ation		
	Sea level [rise]		

[129] Mills-Novoa M, Liverman DM. Nationally Determined Contributions: Material climate commitments and discursive positioning in the NDCs. *WIREs Clim Change*. 2019; 10:e589.https://doi.org/10.1002/wcc.589

GCF Project Proposals

The entire portfolio of GCF approved projects was analysed, including financial proposals (FPs) and Simplified Approval Process (SAPs), totalling 134 projects. This included six projects that lapsed following approval and that will not be implemented. They were nevertheless included because they were approved by the Board, meaning they met GCF standards and requirements. Including them increased our sample size. As more approved projects could still lapse, excluding those six in order to have a 'clean' sample might be illusory.

Analysis of Proposals

All GCF proposals were transferred into NVivo 12 software to undertake a qualitative content analysis. NVivo is a computer assisted qualitative data analysis software and code-and-retrieve index system that allows users to conduct advanced analyses of electronic text data.[130] Using NVivo software we coded the qualitative data in a systematic manner. We used the search function to find specific terms, grouped results into nodes and then coded the nodes to pre-defined categories (cases). Annotations were made throughout the process about relevant qualitative information related to the terms and specific projects.

NVivo allows themes to be identified according to similar meanings through examining and interpreting large amounts of text. These themes can be both explicit (directly stated in the text), or inferred.[131] The search function in NVivo was identified as the most appropriate approach to find the relevant terminology within a large body of text, and to group them within the framework of the Strategic Workstreams. It yields more reliable results as it rules out human error in the searching process.[132] It has also been used in other relevant studies.[133]

Relationship to climate change

In a first step of the coding process, we adjusted our sample based on whether each mention of the key word were attributable to climate change, as opposed to being a direct result of project implementation or of human action without an explicit link with climate change. For example, the "loss of or damage to the works, plants and materials" linked to contractor's insurance, which is not related to L&D. We also excluded mentions contained in the Table of Contents and Bibliography.

A second step was to assess whether the L&D term was included as part of the context, baseline or examples of parallel projects, or proposed as part of the main project activities. If terms were used in

[130] Alshurafat, H., Beattie, C., Jones, G, and J. Sands, (2019), Forensic Accounting Core and Interdisciplinary Curricula Components in Australian Universities; Analysis of Websites, *Journal of Forensic and Investigative Accounting*, Vol. 11(2)
[131] Hsieh, H.-F., and S. E. Shannon. 2005. "Three Approaches to Qualitative Content Analysis." Qualitative Health Research 15(9): 1277–1288. doi:10.1177/1049732305276687
[132] Welsh, E., (2002), Dealing with Data: Using NVivo in the Qualitative Data Analysis Process, *Forum; Qualitative Social Research*, Vol. 3(2), Art. 26
[133] See: Thomas, A., Shooya, O., Rokitzki, M. et al., (2019), Climate change adaptation planning in practice: insights from the Caribbean, Reg Environ Change 19, 2013–2025, https://doi.org/10.1007/s10113-019-01540-5; and Mills-Novoa, M., and D. Liverman, (2019), Nationally Determined Contributions: Material climate commitments and discursive positioning in the NDCs, *WIREs Climate Change*, Vol. 10(5), https://doi.org/10.1002/wcc.589

relation to project activities, those projects were further analysed to determine the specific actions proposed, and whether these were ex ante or ex post measures.

The third step sought to go beyond the explicit use of L&D related key words, to identify projects that implicitly sought to avert, minimise and address L&D. This was undertaken by repeating for all 134 projects the first and second steps (re-coding and assessing the link of key words to L&D) for the terminology relating to the WIM Strategic Workstreams (see Table 5).

Timing

A further analysis addressed the timing of proposals to determine whether there was a change in narrative over time. This was conducted in Microsoft Excel, using the proposal number assigned sequentially according to GCF Board approval.

Limitations

The use of NVivo 12 software focused mainly on searching for predefined key words, therefore only accounting for explicit mentions. Describing and interpreting phenomena based on the results required a robust validity check.[134] In order to minimise bias and improve reliability[135], two researchers conducted separate analyses of the data and the results from NVivo were coupled with manual scrutiny techniques so that the data was thoroughly interrogated.[136]

Using the WIM Strategic Workstreams as the framework for analysis was justified as a way to identify direct or indirect L&D within a proposal. However, the existence of multiple synonyms, as well as overlaps between Workstreams, increased the likelihood of the partial retrieval of information.[137] Many proposals provided insufficient context for key words, which also posed a limitation to assessing whether proposals dealt with L&D implicitly or not. This also created challenges in deciding objectively when proposals used relevant key words with or without the intention of tackling L&D. For this reason, it was not always possible to establish a causal link to L&D, or determine the aim of the main project activities, making our results more conservative since we chose not to include these instances.

[134] Maxwell, J., (1992), Understanding and validity in qualitative research, *Harvard educational review*, Vol. 62(3), pp.279–301

[135] Thomas, A., Shooya, O., Rokitzki, M. *et al.* Climate change adaptation planning in practice: insights from the Caribbean. *Reg Environ Change* **19,** 2013–2025 (2019). https://doi.org/10.1007/s10113-019-01540-5

[136] Maxwell, J., (1992), Understanding and validity in qualitative research, *Harvard educational review*, Vol. 62(3), pp.279–301

[137] Brown, Taylor, Baldy, Edwards and Oppenheimer (1990, p. 136) in Maxwell, J., (1992), Understanding and validity in qualitative research, *Harvard educational review*, Vol. 62, No. 3, pp.279–301