

Journal of Human Development and Capabilities

A Multi-Disciplinary Journal for People-Centered Development

ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/cjhd20>

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To cite this article: Laura García-Portela (21 Jan 2024): A Minimal Capabilities-Based Account of Loss and Damage, Journal of Human Development and Capabilities, DOI: 10.1080/19452829.2024.2305388

To link to this article: <https://doi.org/10.1080/19452829.2024.2305388>



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Published online: 21 Jan 2024.



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A Minimal Capabilities-Based Account of Loss and Damage

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ABSTRACT

The topic of loss and damage has generated contentious debates in international policymaking and climate negotiations. Up until now, political agreements have been possible because of the use of ambiguous language in defining loss and damage. However, with the agreement of creating a specific fund for loss and damage reached in the last COP27, the need to define loss and damage becomes more pressing. This definition will not only determine to whom the funds will flow, but also what kind of measures will be funded. This paper contributes to clarifying these two issues. First, it proposes what should count, minimally, as loss and damage by specifying a minimal account of loss and damage based on the capabilities approach. This minimal account develops and justifies an ex-post perspective on loss and damage that is coherent with the UNFCCC discourse. Moreover, it proposes to differentiate between economic damage, non-economic losses, and non-economic damage. Second, it proposes a variety of reparative measures (material and symbolic) that should be implemented in response to different forms of loss and damage.

KEYWORDS

Capabilities approach; loss and damage; sufficientarianism; climate harm; climate reparations

Introduction

During the COP19 in Warsaw in 2013, the parties agreeing to the Warsaw International Mechanism (WIM) acknowledged that climate impacts had already occurred involving more than can be reduced by adaptation (UNFCCC 2014). These impacts have been called “loss and damage”, and the policies and measures that deal with them appear usually under the initialism of L&D, or L&D measures or policies.¹ The topic has generated contentious debates in international policymaking debate and climate negotiations. Up

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until now, political agreements on the importance of loss and damage were possible because of the use of ambiguous and vague language in defining these concepts (Boyd et al. 2017; Mechler et al. 2020; Puig 2022). However, advancing the implementation of loss and damage political measures requires major clarity. Notably, in an influential piece, Page and Heyward argued that “it is clear that a major stumbling block to further progress in this arena is a series of gaps in our understanding of the meaning, application and justification of the concept of loss and damage” (Page and Heyward 2016, 3). Remarkably, since the publication of their paper, not much progress has been made.

With the agreement of creating a specific fund for loss and damage reached in 2022 by the UNFCCC parties at the last COP27 held in Egypt (UNFCCC 2022), the need for a clear definition of loss and damage becomes now more pressing. This definition also has very important consequences for the implementation of loss and damage measures. First, it determines to whom the funds will flow; second, it will influence what kind of measures will be funded. This paper contributes to pressing policymaking decisions by clarifying these issues.

It is not that no definitions are available. For example, the UNFCCC has defined loss and damage as “the actual and/or potential manifestation of impacts associated with climate change in developing countries that negatively affect human and natural systems” (UNFCCC 2012, 4). However, as Page and Heyward argued, this definition lacks conceptual clarity. Some of the problems are that, in the UNFCCC discourse, loss and damages are treated broadly as “the adverse impacts of climate change” (Page and Heyward 2016, 3), but it is not clear whether the impacts that count as loss and damage are the material and physical impacts of climate change (e.g. a building destroyed by a storm or a drowning island) or the impacts of climate change on people’s lives (e.g. lack of adequate shelter or human displacement). Moreover, there has not been in-depth work on how the concepts of “loss” and “damage” differ from each other, and how the corresponding policy responses should be different. Furthermore, it is also unclear why such a definition needs to be limited to vulnerable and developing countries (Surminski and Lopez 2014).

This paper argues that loss and damage occur, *at least*, when climate change disrupts people’s lives by pushing them below a sufficient standard in their opportunity to enjoy the central aspects of a dignified, flourishing life (or capabilities). I call this view the minimal capability-based account of loss and damage. Moreover, it situates loss and damage measures in relation to other climate change-related measures and proposes reparative measures to address different manifestations of loss and damage. The paper also contributes to advancing the literature on climate justice. First, most of the current theories of climate justice focus on mitigation or adaptation, but less work has been done in defining justice for loss and damage. Second, the capabilities approach has been used to address issues of mitigation and adaptation to climate change,

but we are lacking an explanation of how the capabilities approach relates to core concepts in the loss and damage discourse, such as life disruptions and climate harm.

The paper proceeds as follows. In section 2, I introduce loss and damage as negative disruptions to people's life and present a challenge to articulating climate harm, namely, the so-called non-identity problem. Moreover, I propose a solution to the non-identity problem that limits the concept of loss and damage to those life disruptions that affect people's opportunities to enjoy a sufficient standard of living. This limit provides, at least, a minimal notion of loss and damage. In section 3, I spell out the ways in which loss and damage can occur by relying on the capabilities approach. In a nutshell, I argue that loss and damage occur, at least minimally, when any of people's capabilities are pushed (further) below a sufficiency threshold. Moreover, in this section, I situate L&D measures as ex-post measures. In section 4, I answer some challenges to the ex-post character of this account. In section 5, I propose a distinction between "loss" and "damage" based on the capabilities approach; and I propose different appropriate measures for each of the instances of loss and damage.

Life Disruptions as Harm and the Minimal Understanding of Loss and Damage

To solve some ambiguities, Page and Heyward define loss and damage as "the unjustified disruptions in the lives of individuals and communities, whether permanent or otherwise, that are attributable to anthropogenic climate change and which remain after mitigation and adaptation efforts have been attempted" (Page and Heyward 2016, 3). Two things are worth highlighting here. First, for an impact to count as loss and damage and thus be addressed by L&D climate policies, there needs to exist a connection between the impact and climate change (see also García-Portela 2023, 374). Delving into how this connection should exactly be established is outside of the scope of this paper. However, any answer to that question would need to rely on the recent and ongoing advances in the science of attribution (Otto 2015; 2016; Lloyd and Shepherd 2021; García-Portela and Maraun 2023) and take into account on co-founding factors, that is, non-climate change related factors that also contribute to causing loss and damage (Raju, Boyd, and Otto 2022).²

Second, and perhaps most importantly, Page and Heyward understand the normatively relevant "currency of disruption" in loss and damage as being "human ends", rather than the material and physical impacts of climate change. Here, they follow Amartya Sen's maxim according to which resources matter from a normative perspective for the way they *allow people to do or to be* (Sen, 1999). Hence, from a normative perspective, loss and damage should be understood as disruptions on what people can do or can be because that is

what matters fundamentally.³ This paper adopts this general view. However, some more conceptual work needs to be done in order to flesh out and specify how disruptions and human ends ought to be understood in the context of loss and damage as well as the various forms they might take. This section starts my analysis by delving into the concept of life disruption.

Life disruptions can occur in different ways. One's life can be disrupted by positive changes. For instance, one's life can be disrupted by becoming a parent. Despite being often reported as a positive experience, becoming a parent is an abrupt change in one's life. However, most often the term "disruption" refers to a harmful impact on someone's life. That is, an individual's life is disrupted by a certain event if the individual is harmed by such an event, in the sense of being made worse off than they would have otherwise been in the absence of such an event. Without doubt, this is the way in which "disruptions" are used in the context of loss and damage from climate change. Thus, the concept of loss and damage relies on the notion of life disruption and this one, in turn, on the notion of (climate) harm.

However, this notion of harm is controversial in intergenerational contexts such as climate change because of the non-identity problem (Parfit 1984). Climate change is the result of the accumulation of emissions over time. Moreover, the effects of climate change materialise with a time lag of several decades after the occurrence of those emissions. For that reason, climate change is at least partly, but substantially, caused by past emissions (Meyer and Roser 2010). Past activities responsible for climate change (the use of trains, cars, planes or the reliance of our energy systems on fossil fuels, etc.) affect the standard of living of presently living people. Moreover, because of their impact on social interactions, they also affected who will come into existence. However, it is difficult to claim that the activities that bring people into existence also harm them in the sense of making them worse off than they would have otherwise been (counterfactual notion of harm). Presently living people affected by past climate change-inducing activities are not worse off than they would have otherwise been. Instead, in the absence of climate change-inducing activities, they would have never existed. If this is true, it is likely that members of the current generation have not been made worse off, and thus harmed, by climate change (Page 2008; Caney 2006; L. Meyer and Roser 2010).

Does this mean that people cannot suffer harm in the form of life disruptions due to climate change? I do not think so. Notice that the non-identity problem rests on a counterfactual notion of harm. But a different notion of harm might be able to make sense of the idea that our actions can harm future people or that currently living people have been harmed by the actions of previous generations. Some authors have argued that a sufficientarian threshold notion of harm could indeed circumvent the non-identity problem. According to a sufficientarian threshold notion of harm, a person is harmed when they are pushed below a level sufficient to live a decent and dignified flourishing life,

thereby coming to live a life with intrinsically bad properties (Meyer and Roser 2009; Meyer 2015). This notion of harm circumvents the non-identity problem because it is non-comparative, that is, it does not require comparing the state of a person to a counterfactual one. For a person to suffer harm, it is enough that they are made to fall below a sufficiency threshold. Arguably, this is true at least for some people that suffer the negative consequences of climate change.

One might not be convinced about the relevance of the non-identity problem and think that this is only a philosophical puzzle with no real-world relevance (Butt 2009). However, even in this case, understanding loss and damage along the sufficientarian threshold notion of harm can play an additional role. Even if one disregards the non-identity problem and believes that harm can occur in intergenerational contexts in a counterfactual sense, one could still doubt whether all the negative impacts of climate change should be the subject of L&D policies, or whether they should also have the same normative status. Think about the multimillionaire who loses his twentieth house in a flood event close to the coastline. In this case, this multimillionaire might suffer counterfactual harm, bracketing the non-identity problem. But, arguably, compensating for those losses and damages might not be a priority because it does not undermine the multimillionaire's life in a significant enough way, and it can be very costly for society to bear such a burden. One might argue that this money could be used instead for other climate change-related purposes, such as further mitigation or adaptation projects, or even for other societal purposes. Taking this into consideration, one might question whether such negative effects should be covered by, or at least be the priority of, loss and damage policies.⁴

I do not intend to defend here such a view. However, I believe that the sufficientarian threshold notion of harm can identify at least a minimal way in which loss and damage can occur and the kind of climate harm that should be the focus of and have priority in L&D policy. I believe that stakeholders could agree that loss and damage occur, at least, when people are pushed below a level sufficient to live a decent and dignified flourishing life and that L&D policies should be focused on and give priority to this kind of climate harm.

Moreover, the notion of threshold harm involved in this minimal account justifies the focus on developing and vulnerable countries in the loss and damage discourse, even if we exclude this reference from the general definition. We can expect that it is in such countries that the negative effects of climate change impact people's ability to enjoy the minimum to live a sufficiently decent life. In other words, my account clarifies that, even though it would be unjustified to limit the definition of loss and damage to impacts occurring in vulnerable and developing countries, loss and damage defined according to my approach are more prone to occur in those countries and therefore a particular policy focus on them is justified.

A Minimal Capabilities-Based Account of Loss and Damage.

According to a sufficientarian threshold notion of harm, a person is harmed when they are pushed below a level sufficient to live a decent and dignified flourishing life, thereby coming to live a life with intrinsically bad properties. When a person is harmed in this way due to climate change, they experience loss and damage. However, to flesh out that definition, we need to specify what these intrinsically bad properties are. Here, I offer an interpretation along the lines of the capabilities approach to describing loss and damage.

The capabilities approach states that there are certain objective and universal core elements of people's flourishing life (functionings) whose opportunities for realisation (capabilities) should be guaranteed and not thwarted as a matter of social justice (Sen 2009; Nussbaum 2007; 2011). Note that the relevant notion is the one of "opportunities", capabilities, to achieve certain functionings and not the achievement of the functionings themselves. Someone can enjoy a perfectly flourishing life without achieving these functionings provided that they have the real opportunity to do so. The classical example (Sen 2009, 237) is that of a person who voluntarily fasts (even though they might not reach a certain level of functionings, the fact that they can do so leaves their capabilities intact). According to my proposal, people are harmed in this threshold sense when they are pushed below a sufficientarian level in at least one of their central capabilities, and we can describe the harmful impacts involved in loss and damage in these terms.

Famously, Nussbaum has provided a list of central capabilities (Nussbaum 2007; 2011).⁵

If a person's capability is pushed below a sufficiency level, this constitutes an intrinsically bad property for the life of this person because it prevents the person from enjoying a decent and flourishing life, or, as Nussbaum would put it, a truly human life or a life of dignity (Nussbaum 2007, 71). Having one or various capabilities below this sufficientarian threshold is intrinsically bad for people and, in this sense, constitutes threshold harm. Consequently, loss and damage occur when, because of the negative effects of climate change, people experience life disruptions that push them below a sufficient level of certain capabilities.⁶

With this view in mind, we can differentiate between mitigation and adaptation as *ex ante* or prospective policies, on the one hand; and loss and damage as *ex post* or retrospective policies, on the other hand. Mitigation policies aim to avoid climate change pushing people's capabilities below a sufficiency threshold by reducing the total amount of emissions in the atmosphere and enhancing carbon sinks. Adaptation policies also aim to avoid people's capabilities falling below a sufficiency threshold due to the negative effects of climate change, but they do so by adjusting populations to the observable negative effects of climate change or to those threats that are foreseeable

in the near future. Finally, L&D policies aim to repair the negative effects of climate change on people's capabilities that cause them to fall below a sufficiency threshold with material and symbolic reparations. In this way, L&D policies have an eminent reparatory aim.

These temporal distinctions take the effects of climate change on people's sufficiency level of each capability as the reference point. [Table 2](#) represents these distinctions:

Before closing this section, let me raise and answer one concern. Recall that the decisions in Article 8 of the Paris Agreement (1/CP.21 52) entail that "the Agreement does not involve or provide a basis for any liability or compensation". Hence, some might believe that the language of "reparations" is too close to "compensation" and thus runs into political feasibility problems.⁷ In other words, some might believe that if we conceptualise loss and damage measures as reparations, they will lack enough support as a viable measure to address loss and damage. However, two things are worth bearing in mind. First, motivational constraints constitute only a challenge to feasibility. This challenge only suggests one should explore how to change motivational structures of the relevant agents at stake (Gilbert and Lawford-Smith 2012).

Second, and perhaps most importantly, the use of the language of reparations in this context should be taken as neutral with regards to principles of burden-sharing for loss and damage. Notice that "compensation" was rejected in the Paris Agreement because it would otherwise attribute L&D duties, i.e. make liable for loss and damage, to those historically most responsible for climate change, i.e. highly industrialised countries. With the exclusion of "compensation" and "liability", developed countries would thus want to avoid being held responsible for their historical emissions. However, reparation duties do not need to imply historical responsibility and liability. Reparations here should be taken as measures to address harm, regardless of the underlying normative distributive principle to repair that harm.⁸ To put it in other words, to repair means here simply "to make something good". Considered independently of burden-sharing principles, the language of reparations should thus not undermine political feasibility.

Answering Some Challenges to an Ex-post Categorization of L&D

My ex post categorisation of L&D could be challenged at least on two fronts. These challenges arise from a potential conflict between my proposed definition and how L&D measures have been framed broadly in the political and academic discourse. Answering these two challenges here allows me to justify the retrospective dimension of loss and damage and develop my capabilities-based account further.

The first challenge concerns the inclusion of risk management measures within L&D measures. Various scholars have argued that L&D include at

least some risk management measures in response to climate change. They differentiate between acceptable, tolerable and intolerable risks (Dow et al. 2013) and argue that L&D measures deal with intolerable risks (Wallimann-Helmer 2015; Mechler and Schinko 2016; Wallimann-Helmer et al. 2018; Schinko, Mechler, and Hochrainer-Stigler 2018). However, risk management of intolerable risks occurs *ex ante*, that is, before the impacts of climate change materialise. But if this kind of risk management is an *ex ante* measure and is considered part of L&D measures, the category of L&D cannot be considered fully *ex post*.⁹

In response to this challenge, I argue that my approach is compatible with the inclusion of the management of intolerable risks within L&D without undermining the categorisation of L&D as *ex post* measures. In a nutshell, this is because intolerable risks are precisely defined as risks that already affect people's ability to reach a sufficient level of capabilities.

A clear definition of "intolerable risks" is lacking in the literature. One of the best attempts has been made by Wallimann Helmer, who claims that "intolerable risks arise when a human system is not able to adapt to anticipated negative climate impacts" (Wallimann-Helmer 2015, 472). Unfortunately, this definition is circular. Note that L&D measures are measures to be undertaken when adaptation is no longer possible. If intolerable risks are defined by reference to adaptation, that definition implies that what distinguishes L&D measures from adaptation is that L&D measures concern intolerable risks and that intolerable risks are those risks that adaptation does not cover. The question that still remains is how to describe the kind of risks to which one is no longer able to adapt, i.e. intolerable risks.

Wallimann-Helmer provides two claims that can help in providing an answer to that question. First, he claims that "the limits of adaptation are reached when risks become intolerable" (Wallimann-Helmer 2015, 472). Second, he claims that "the limits of adaptation are reached when a human system is no longer able to secure valued objectives" (*ibid*). These two claims seem to suggest that an intolerable risk is reached when a human system can no longer secure valuable objectives. Naturally, the next question is what those "valuable objectives" are. Although Walliman-Helmer does not clarify this last point, his reliance on Dow et.al (2013) might provide adequate guidance. These scholars exemplify the notion of limits to adaptation and intolerable risks thus:

A farmer seeking to cultivate a specific crop under increasingly stressed water resource will invest in [...] increasing adaptive effort as access to water resources becomes more constrained [...]. *But, at some point, no new adaptation options are available to respond to growing risks, or the level of adaptive effort required to maintain valued objectives becomes infeasible.* At this point, the farmer may, for example, choose to abandon farming altogether (Dow et al. 2013, 306; italics mine)

Following this example, it looks as if the farmer's valuable objectives are attached to their life as a farmer. This could include their work as a farmer and the forms of affiliation and social interaction associated with their farming activities. Or perhaps their close relation to nature. However, due to water stress, continuing their life as a farmer, although a valuable objective, is too risky. For instance, one could imagine that their life as a farmer is at risk because, if they continue, they might lose too much money. Or they might not have enough food to eat next month, given that he will not be able to earn enough food from their farming. Arguably, this is too much of a risk to run. Or, in other words, this is an intolerable risk because they can no longer secure his valuable objectives. Because of the risks they face, they need to stop farming, thereby abandoning one of those valuable objectives. Probably, also, they need to search for a different job and perhaps even in a different location.

Notice that this same idea can be described in terms of the capabilities approach and also in terms of the ex post understanding of L&D. Arguably, these valuable objectives are the central elements of a person's flourishing life or functionings. In fact, the valuable objectives mentioned before map quite nicely with the functionings corresponding to some capabilities mentioned above. For instance, the capabilities of enjoying our relationship with other species and particularly with the world of nature; affiliation; practical reason; or control over one's material and political environment (see Table 1). But because of the risk of, for instance, going bankrupt or not having to eat next month, the farmer has to abandon their activity, which means that they may no longer have the real opportunity to develop at least some of those core elements of the flourishing life to a sufficient level. And the real opportunities to develop those core elements of a flourishing life are precisely the capabilities.

Table 1. Nussbaum's capabilities list (2007, 2011)¹⁸.

-
1. Life: [...] not dying prematurely, or before one's life is so reduced as to be not worth living.
 2. Bodily health: Being able to have good health [...]; to be adequately nourished; to have adequate shelter.
 3. Bodily integrity: Being able to move freely from place to place [...]
 4. Senses, imagination and thought: [...] Being able to use imagination and thought in connection with experiencing and producing works and events of one's choice [...]
 5. Emotions. Being able to have attachments to things and people; [...]to love, to grieve, to experience longing, gratitude, and justified anger. Not having one's emotional development blighted by fear and anxiety. [...]
 6. Practical reason. Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. [...]
 7. Affiliation. Being able [...] to engage in various forms of social interaction; [...]
 8. Having the social bases of self-respect [...]; being able to be treated as a dignified being whose worth is equal to that of others. [...]
 9. Play: Being able to laugh, to play, to enjoy recreational activities.
 10. Other species: Being able to live [...] in relation to animals, plants, and the world of nature.
 11. Control over one's environment.
 12. Political. Being able to participate effectively in political choices that govern one's life; [...]
 13. Material. Being able to hold property [and] having the right to seek employment on an equal basis with others.
-

That is, they might be unable to enjoy at least some of their capabilities, thereby suffering loss and damage.

In other words, the farmer may experience some form of loss and damage precisely when they can no longer enjoy their capabilities (valuable objectives) at a sufficient level because of the risk they face.¹⁰ Hence, the inclusion of risk management of intolerable risks within L&D measures does not challenge my ex post understanding of L&D. Instead, L&D measures should be understood as ex post measures that include the management of those kinds of risks that already affect people's enjoyment of capabilities at a sufficiency level.¹¹

The second challenge concerns capacity-building for implementing L&D measures. Arguably, the capacity for responding to L&D needs to be in place before loss and damage occur. This might suggest that at least some L&D measures must be established ex ante, (long) before climate impacts actually materialise (Wallimann-Helmer 2015, 471). For instance, L&D measures might include insurance schemes that must be established before climate change impacts occur (Mechler and Schinko 2016; Linnerooth-Bayer et al. 2019).

However, note that my approach can make sense of the inclusion of insurance schemes in the sphere of L&D without undermining my ex post categorisation. Here, we could differentiate between the establishment of certain mechanisms and the gathering of certain resources (i.e. such as insurance policies), and L&D measures themselves. Whether capacities are built and resources (e.g. money) are gathered beforehand, the relevant L&D measures concern such matters as providing money job training opportunities, and relocation expenses. But notice that these measures are not undertaken before loss and damage occur. Although the capacities to carry out those particular measures might be established beforehand, the actual restoration of capabilities occurs ex post. In my view, it is not the insurance mechanism itself that is the L&D measure but the particular actions that are carried out using the funds of the insurance policy to address loss and damage. This is better described as an ex-post L&D measure that involves an insurance mechanism.

Conceptual Clarifications and Types of Reparation for Loss and Damage

In this section, I propose an interpretation of the two concepts “loss” and “damage” following the minimal capabilities-based approach. Moreover, I do the same with the concepts of economic and non-economic losses and damage, and the kind of reparations corresponding to these categories.

The Notions of “Loss” and “Damage” in Loss and Damage

It is not uncommon to find “loss” and “damage” as synonyms in the literature on loss and damage (Preston 2017). The UNFCCC refers to “losses” as

“negative impacts in relation to which reparation or restoration is impossible”, and “damages” as “negative impacts in relation to which reparation or restoration is possible” (UNFCCC 2012, 3). Some have interpreted the distinction as referring to “loss” as a permanent disruption to human lives and “damage” as disruption that is reversible (Kreft, Harmeling, and Warner 2012; Huq, Roberts, and Fenton 2013).

The capabilities-based framework draws and elaborates on this distinction. To begin, recall from the first section that the relevant impacts that concern loss and damage are those that compromise the sufficiency level of people’s capabilities. For that reason, my analysis here uses the definition of loss and damage as concerning the effects of climate change on people’s capabilities and not the effects of climate change on objects. The individual definitions of “loss” and “damage” follow this idea.

Following the capabilities-based framework, losses are permanent disruptions to the enjoyment of a central capability at a sufficient level; whereas damages are temporary impairments on the enjoyment of a central capability at a sufficient level. For instance, imagine that a building results severely damaged after a storm event. The affected capability here is that of bodily health, which includes access to adequate shelter. If the inhabitants of that building can be relocated somewhere else without other capabilities, such as affiliation or practical reason, being affected, then we can speak of temporary damage in the sufficient enjoyment of their capability of bodily health. However, if they cannot be relocated without other capabilities being affected, then this temporary damage of their bodily health might be accompanied by permanent loss affecting their enjoyment of a sufficient level of a certain capability. This could happen, for instance, if these people were relocated to an area where they could not develop meaningful social interactions due to important cultural differences. In that case, those people would experience permanent loss to the sufficient level of their capability of affiliation, or their capability of control over their political environment.¹²

These definitions are in line with the UNFCCC discourse, with the caveat that the UNFCCC merely refers to loss and damage as “impacts”, whereas here I propose to read these impacts as referring to the enjoyment of capabilities at a sufficient level.

Reparations for Economic Damage, Non-economic Losses, and Non-economic Damage

This section also deals with the notions involved in loss and damage discourses, but this time the notions under scrutiny are economic and non-economic losses and damage. Although the UNFCCC distinguishes only between economic and non-economic losses, here, I argue that the relevant notions in a loss and damage capability-based framework should be the notions of economic

damage, non-economic losses, and non-economic damage. Admittedly, this is a somewhat unorthodox view, but one that better serves the purposes of explaining loss and damage as harmful impacts to people's sufficient levels of capabilities. Moreover, in this section I propose a categorisation not only of the harmful impacts of climate change but also of the various types of L&D reparations that are owed to those who suffer loss and damage.

The UNFCCC (2013) defines economic and non-economic losses as follows:

- Economic loss concerns “the loss of resources, goods and services that are commonly traded in markets” (UNFCCC 2013, para.3).
- Non-economic losses concerns “items that are not commonly traded in markets” (UNFCCC 2013, par. 4).

In the previous section, I proposed using the terms “loss” and “damage” to refer to capabilities instead of objects. However, for the sake of the following argument, let us leave that framework aside for a moment and refer to loss and damage as applied to objects. These definitions seem to clash with the UNFCCC definition of loss defined as the “negative impacts in relation to which reparation or restoration is impossible”. Notice that if losses are the impacts for which reparations or restoration are not possible, it is difficult to see how they can be economic. If an economic loss can be tradable in the market, one could restore this loss by simply quantifying its economic value and transferring that quantity of money to the person who suffered the loss. Consequently, the loss is not impossible to restore or repair, and even less can it be considered permanent. This clashes with the definition of loss provided by the UNFCCC. For reasons of coherence, because I have previously embraced and defended a particular interpretation of the use of the UNFCCC definitions of “loss” and “damage”, I propose to avoid here the use of “economic loss”.

Interestingly, the UNFCCC speaks of “economic loss” but not of “economic damage”. Here, I propose to use the notion of economic damage to express something similar to what might be expressed by the notion of “economic loss” in the UNFCCC document. Economic damage concerns the temporary unavailability of items that can be restored or repaired, at least to a certain level, by economic means. However, since I have used the terms loss and damage in describing the capabilities approach, this definition needs to be formulated accordingly. We can define economic damage as the temporary impairment of the enjoyment of capabilities at a level that can be repaired through economic means. In my view, this notion of “economic damage” coheres better both with the definition of loss and damage provided by the UNFCCC and with the capabilities approach presented here.

Economic damage in this sense is the object of material reparations. Material reparations concern economic damage. This kind of reparation is aimed at the

negative effects of climate change on people's enjoyment of capabilities at a sufficient level by economic and material means. For instance, material reparations for economic damage tackle the negative effects of climate change on housing infrastructure. Recall the example mentioned above. Extreme rainfall might cause severe damage to people's houses, thereby depriving them of adequate shelter. Such an event would cause economic damage by impairing people's capabilities temporarily in ways that can be repaired through economic means. For instance, such an event would impair their capability of bodily health, whose definition includes access to adequate shelter. Of course, not all loss and damage involved in such an event are economic damage in this sense. But at least some of them are, and those are the ones we refer to when we speak of material reparations for economic damage.

In a nutshell, I propose to substitute the notion of "economic loss", described as "the loss of resources, goods, and services that are commonly traded in markets" with the notion of economic damage, described as "the temporary impairment in the enjoyment of capabilities at a sufficient level that can be repaired through economic means". Moreover, I propose to use the term "material reparations" to refer to reparations that concern economic damage. In my view, these definitions are more coherent both with the notions of loss and damage involved in my capability-based account and with the definitions provided by the UNFCCC.

Let us now turn to the notion of non-economic losses. As we saw, the UNFCCC describes non-economic losses as that concerning "items that are not commonly traded in markets". In the terms I propose here, we could understand non-economic losses as concerning the permanent impairment of people's enjoyment of capabilities at a sufficient level that cannot be fully repaired through economic means. In my view, this description of non-economic losses is coherent with the UNFCCC description of non-economic losses because the core idea is that these losses concern goods that cannot be reduced to their economic value. The main difference is that, instead of using the term "loss" as applied to goods or objects, I use it here to refer to people's capabilities.

The 2013 UNFCCC technical paper "Non-economic losses in the context of the work programme on loss and damage" gives an overview of the types of non-economic loss and damage linked to climate change and the impacts they have on human lives. Notably, many of these correspond to items on the capabilities list:

Unfortunately, I cannot here develop a comprehensive analysis of how these elements relate to each other, nor can I provide an exhaustive list of non-economic losses associated with capabilities. However, there are two paradigmatic cases of how non-economic loss relates to losses associated with people's central capabilities. These are the case of the Inuit Circumpolar Conference Petition and the claims of Small Island States (SIS) (Heyward 2010; 2012).¹³

The Inuit people, who live in different states around the Arctic Circle, have suffered loss and damage due to global warming. Warmer temperatures and shifts in seasonal patterns are causing ice to melt to the point of undermining the central capabilities of the Inuit people. The Inuit Circumpolar Conference petition claimed that the effects of climate change have undercut the Inuit's ability to enjoy their ways of life and have had an important impact on their health, safety, subsistence harvest, travel, and cultural and social affiliation (ICC 2005, 67). These effects are both causing what I have called here economic damage, for instance concerning their access to food and shelter, and non-economic losses because these effects are impacting the Inuit's survival as a distinct and unique society.

Changes brought about by rising temperatures have affected their cultural and social activities linked to food preservation, igloo building, and traditional hunting activities, which are associated with their identity as a social and cultural group. Unlike economic damage, the loss of the activities linked to their identity as a group causes permanent and irreversible loss in their enjoyment of capabilities at sufficient levels, such as their capability of affiliation and practical reason (see Table 1). The loss of these capabilities constitutes a non-economic loss because these capabilities cannot be restored by material or economic means. (Tables 2–4)

The case of communities living in SIS is similar. Rising sea levels due to climate change have caused floods that threaten settlements and infrastructure and severely reduce clean water availability. Many of these states, such as Kiribati and Tuvalu, are low-lying and face the risk of going completely underwater. Worsening life conditions and the threat of disappearing under water will probably cause the loss of their territory and cause them to migrate. The loss of territory has economic dimensions that will constitute temporary damage to their central capabilities. However, these can be restored with appropriate material reparations. But the loss of territory has implications for the existence of a self-governing community and the political control they can have over their territory (Bell 2004). Therefore, migrating to a different territory would come with non-economic loss of capabilities such as control over their political environment and affiliation.

Table 2. Typology of climate change measures.

Temporal dimension Climate policies	Ex ante		Ex post
	Mitigation	Adaptation	L&D
Aim	Avoiding climate change pushing people's capabilities below a sufficiency threshold		Repairing the negative effects of climate change on people's sufficiency threshold of capabilities
Method	Reducing CO ₂ emissions or improving carbon sinks	Reducing vulnerabilities or enhancing coping mechanisms	Material reparations and symbolic reparations.

Table 3. Relation between non-economic losses and damage and capabilities.

Non-economic losses (UNFCCC 2013)	Nussbaum (2007; 2011)
Life: loss of life.	Life
Health: loss of physical and psychological health associated with respiratory diseases, cholera, sunstrokes, etc.	Bodily health
Displacement and human mobility: associated with loss of security and agency.	Bodily integrity Control over one's environment (material and political) Practical reason
Territory: loss of sovereignty and sense of place.	Affiliation Emotions Senses, imagination and thought Practical reason Control over one's environment
Cultural heritage: associated with loss of social cohesion and identity.	Affiliation Emotions Senses, imagination and thought Practical reason
Indigenous knowledge and other social capital: associated with loss of social cohesion and control over the environment.	Affiliation Emotions Senses, imagination and thought Practical reason
Biodiversity and ecosystem services: loss of diversity of living organisms and supporting, provisioning, regulating, and cultural services provided by ecosystems.	Other species Bodily health

The Inuit peoples and SIS cases show the kind of non-economic losses that people suffer due to climate change. These are losses because there is at least one sense in which these capabilities will be permanently impaired. They are also non-economic because they cannot be repaired through economic means. Instead, the reparations that are appropriate in these cases are victim-centred symbolic reparations. According to the account I offer here, victim-centred symbolic reparations aim to preserve the history and culture of victims and affirm the value of what has been lost.¹⁴

Victim-centred symbolic reparations include measures of remembrance and commemoration initiatives that “enable victims of climate change injustice to record their story, to recount what was lost and its effects upon them” (Heyward 2012, 163). Moreover, “there should also be provisions made for the preservation of aspects of the group’s cultural heritage: arts, technology, crafts, etc.” (Heyward 2010, 269). Similarly, Serdeczny, Bauer, and Huq (2018) have suggested that these measures should be drawn from historical analogues of loss and practices of memorisation. As Barnett et al. (2016) have argued, the ultimate goal of those practices is to manage grief and sustain the association with what would otherwise be forgotten. Museums and memorials might be the most prominent victim-centred forms of symbolic reparations. Whereas these practices cannot make fully up for the loss of the relevant capabilities (such as affiliation and practical reason) at the sufficiency level, they are important for the sense of identity of the remaining community members who have experienced these losses and thus help in mitigating their suffering.

Table 4. Types of loss and damage and corresponding reparations.

		Ex post measures			
		L&D			
Policy Aim		Repairing the negative effects of climate change on people's sufficiency threshold of capabilities			
Method	Reparations	Material reparations		Economic damage	Repairing the material effects of climate change related to people's enjoyment of capabilities at a sufficient level
		Symbolic reparations	Victim-centred Agent-centred	Non-economic losses Non-economic damage (affecting relations of respect)	

Remembrance and commemoration aim at preserving the cultural values that has been lost due to forced migration and the negative effects of climate change. However, forced migration causes also the loss of political self-determination, thereby negatively affecting the capability of control over one's political environment. Some other measures might be helpful not only to lessen the loss of political self-determination but also to affirm its value. For example, a free movement passport has been proposed to help the territorially disposed re-build their political and cultural identities in a new territory, at least to the extent that this is possible (Heyward and Ödalen 2016). At the same time, giving them the choice of where to relocate and where to re-build their cultural and political identity with a territory affirms the value of their (now lost) political self-determination and thus can be seen, too, as part of victim-centred symbolic reparations.

Victim-centred symbolic reparations should be distinguished from agent-centred symbolic reparations, which might be included to some extent at least under certain normative accounts for loss and damage (Heyward 2010; García-Portela 2020). Agent-centred symbolic reparations address non-economic damage concerning the effects of climate change on relationships of respect among differently responsible parties. As with "economic loss", the UNFCCC does not speak of "non-economic damage". Yet, I believe that there might be some room for this concept.

There is a sense in which we might speak of non-economic damage, which concerns the relationships of respect between those most responsible for climate harm and those who suffer climate change-related harm. There are various normative accounts that would ground the existence of this kind of non-economic damages and thus the duty to provide agent-centred symbolic reparations by certain agents. For some of them, non-economic damage of this sort occur when there is some kind of wrongdoing perpetrated by polluters towards climate change victims, particularly if polluters already knew about the negative effects of climate change (Heyward 2010; 2012; Page and Heyward 2016). Some others would merely appeal to certain harm-doing (such as infringements of human rights) as the reason why the relationship would be impaired (García-Portela 2020). Unlike economic damage and non-economic loss, non-economic damage does not directly impair the sufficient level of any capability but occurs at a metalevel, whenever any of the capabilities are pushed below a sufficiency level because of climate change.

This impairment of the relationship of respect might be temporary, depending on the measures undertaken to repair it. In principle, the relationship between victims and responsible parties can be repaired through agent-centred symbolic reparations.¹⁵ Agent-centred measures may include public apologies, acknowledgements, statements of agent regret, and commitments to nonrepetition. In the context of the UNFCCC, these measures are most appropriate to be undertaken by states whose high development levels

have been attached to intensive emissions-generating activities and would be directed to those members of the global community who suffer the negative effects of climate change.¹⁶ Agent-centred measures concern thusly the self-understanding of the state undertaking these acts because the acts involve an acknowledgement of the consequences of their actions as part of their history. The purpose of these measures is to acknowledge the role of the responsible parties and eventually to repair the relations of respect among differentially responsible and affected parties.¹⁷ Consequently, agent-centred measures of symbolic reparations have two dimensions: one that looks backward to acknowledge certain harms as committed by the agents and one that looks forward to developing their contemporary self-understanding through the repudiation of these harms and the commitment to their nonrepetition.

Notice that agent-centred measures will not achieve their goal if the responsible parties themselves do not perform them. That is, agent-centred symbolic reparations presuppose that responsibility for having caused climate change plays at least some role in the distribution of (at least some) L&D duties. This is different from other reparations for loss and damage, which could be distributed according to other principles rather than responsibility-based principles. Here, I leave open which should be the normative guiding principles for most L&D reparations. If someone disagrees that responsibility for causing climate change should play a role, then one would also need to exclude agent-centred symbolic reparations in the bundle of L&D measures. However, my aim here is merely to point out which loss and damage categories are plausible and which reparatory measures would correspond with them.

Finally, notice that economic and non-economic loss and damage are usually intertwined. Loss and damage from climate change usually have both economic and non-economic consequences. People who suffer the negative consequences of extreme precipitations and floods by losing their houses have been pushed below a threshold of their bodily health capability because they are deprived of shelter and access to clean running water. They might also suffer non-economic losses. If the consequences of the climatic event are too severe, they might be forced to move out of their villages, thereby losing control over their political environment. They might also lose their forms of affiliation. Moreover, such an event also impairs their relations of respect with those who contribute most significantly to climate change. By being pushed below a relevant threshold of capabilities, people are disrespected in ways that severely damage their relationship with those who are responsible for them. All this loss and damage is intertwined, and it often appears in single cases of loss and damage.

The following table offers an overview of the different types of loss and damage and the related reparative measures:

Conclusion

After the agreement reached at the COP27 in Egypt in 2022 for creating a specific fund for loss and damage, the need for a clear definition of this concept becomes a major issue for climate policymaking. Arguably, such a definition will determine to whom the funds will flow and what measures will be funded. This paper has attempted to provide a definition based on the capabilities approach, thereby bridging the gap between philosophical work and the reality of policymaking. According to this approach, loss and damage refer to the harmful disruptions of climate change on people's enjoyment of, at least, a sufficient level of capabilities. Moreover, this capabilities-based approach grounds existing categorizations of loss and damage as permanent and temporary disruptions and suggests a new subcategorization of economic and non-economic loss and damage. The paper has also presented a variety of loss and damage measures that corresponds to its different manifestations, ranging from material to agent- and victim-centred symbolic reparations.

Notes

1. This paper sticks to this naming convention.
2. I thank an anonymous reviewer from bringing up this point.
3. The focus on human ends does not preclude that material impacts (and thus material reparations) are not relevant for L&D policy. We should acknowledge that loss and damage result from material impacts caused by climate change, but this is because human ends highly depend on material resources. Hence, reparations for loss and damage often will need to involve material and economic reparations. However, as I explain in detail in section 5.2, material and economic reparations depend in this context on to how they help people recovering their capabilities, that is, their ability to pursue certain human ends.
4. Our intuitions might be different if we believe that those causing those damages to the rich person did so intentionally or could have easily avoided that harm. In that case, making the perpetrators pay for the multimillionaire's damages might be required as a matter of deterrence or retribution. However, here I address the question of how to repair loss and damage. Issues of deterrence and retribution are left aside. I thank an anonymous reviewer for this point.
5. This specification of a central list of capabilities has led to accusations of "westerncentrism" (Jaggar 2006). The accusation is that Nussbaum is just representing a conception of human flourishing from a Western perspective. Although it is true that capabilities are taken to be objective and universal, there is room for incorporating cultural differences in the way capabilities are realized.
6. How to understand the relevant sufficientarian capabilities thresholds and how to measure them should be further researched, although some advances have been carried out in the existing literature (Anand, Hunter, and Smith 2005; Comim 2008; Fourie and Rid 2017; Azmoodeh, Haghghi, and Motieyan 2023)
7. For instance, before the COP21, the US Secretary of State, John Kerry, declared that framing loss and damage as an issue of compensation would "kill the deal" (see <https://>

[www.rollingstone.com/culture/culture-news/john-kerry-on-climate-change-the-fight-of-our-time- 50220/](http://www.rollingstone.com/culture/culture-news/john-kerry-on-climate-change-the-fight-of-our-time-50220/))

8. Agent-centred symbolic reparations are an exception, since they do require that polluters perform those reparation duties. See my discussion at the end of section 5.2.
9. One could also argue for the exclusion of risk management measures from L&D measures, but this would be at odds with many understandings of L&D and thus require more argumentation. Instead, I argue that risk management of intolerable risk can be explained within my capabilities-based approach.
10. Notice that the farmer might be able to change timely to a new profession. This new profession might be able to satisfy some of the affected capabilities and to do so at a sufficient level. In this case and for those capabilities, the farmer would be able to *adapt* to the negative consequences of climate change without experiencing loss and damage. However, it is also plausible that this would not be the case for all the capabilities affected by climate change and, thus, at least in some aspects of their life, the farmer might suffer loss and damage. Hence, the aforementioned example may involve adaptation and loss and damage dimensions. However, I have focused the discussion only on loss and damage, since this is the topic of my paper.
11. A further research question then would be whether people should be entitled to reparations based on the losses triggered by objective or “real” climate change-related risk or based on mere subjective or perceived risk. I thank an anonymous reviewer for this point.
12. Colloquially, we might also use the term “loss” to refer to temporary disruptions and “damage” to refer to some permanent disruptions (Page and Heyward 2016, 8). However, in my view, since the distinction between permanent and temporary disruptions is, normatively, the most important one, it is useful to align this distinction with the one between loss and damage, thereby respecting the UNFCCC terms.
13. More examples can be found in (Warner and Van der Geest 2013; Morrissey and Oliver-Smith 2013; Frankhauser, Dietz, and Gradwell 2014; and Kreienkamp and Vanhala 2017).
14. Often, symbolic reparations require financial support. In that sense, symbolic reparations are not only symbolic, but to some extent also financial. However, in this case, financial measures are only means to the end of repairing symbolically non-economic losses. For that reason, I respect the convention of calling these measures “symbolic”, as it has been suggested in the literature on this topic (Meyer 2006; Heyward 2012; García-Portela 2020)
15. One could also speak of “non-economic damage” if one believes that certain non-economic dimensions of people’s capabilities can be fully repaired with the passage of time. Some might believe that, even after migrating, groups may evolve and develop new cultural practices associated with their new conditions, restoring at least some of their affected capabilities, such as their capability of control over their political environment. However, this is admittedly very difficult. For that reason, I leave this discussion aside.
16. In fact, many climate justice scholars take states to be the relevant agents of climate duties (Page 2012; Zellentin 2015; Gardiner and Weisbach 2016; García-Portela 2019; Francis 2020). This is not to say that other polluting agents should be left of the hook, such as companies or individuals. However, it is the responsibility of the state as an intergenerational entity and a political actor to undertake agent-centred symbolic measures. However, this does not preclude that other polluting actors could be burdened, for instance, with economic sanctions by those states that are made responsible for their emissions.

17. Sometimes, victims might not be willing to forgive, especially in cases of intentional and grievous harm. In such circumstances, the relations of respect between victims and the responsible parties might be permanently impaired and, in such cases, we would speaking of non-economic loss instead of non-economic damage. However, because in principle these relationships can be repaired through the non-economic means, I prefer to speak of non-economic damage.
18. Text omitted for simplicity's sake.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by Austrian Science Fund [grant number: W1256]; Schweizerischer Nationalfonds zur Förderung der Wissenschaftlichen Forschung [grant number: 197363].

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