

**Loss &
Damage**

Conceptual and operational problems for Loss and Damage

Working Paper

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1. Introduction

International climate policy has evolved with the manifestation of climate change impacts and our scientific understanding of them. When the phenomenon of climate change was initially recognised, a policy framework was proposed by the United Nations Framework Convention on Climate Change (UNFCCC) in order to mitigate the effects of greenhouse gases (GHGs) under the Kyoto Protocol (UNFCCC COP 2008). However, when it was realised that it was already too late to fully stabilise GHGs in the atmosphere, another policy paradigm came into being to adapt to expected impacts with the Cancun Adaptation Framework (CAF). Now clear instances are coming to the fore in which climate-driven stresses cannot be adapted to, not because of internal deficiencies of vulnerable peoples, but because of the preponderance of the stress entailed in certain slow-onset and extreme effects (UNFCCC COP 2008; IPCC 2012). Specific social and environmental processes have produced acute exposures and vulnerabilities to these stresses that may overwhelm regions such as Small Island States (SISs), coastal settlements and semi-arid regions. In some of these areas, productive livelihoods and human habitation have reached their limits (Warner et al. 2012; IPCC 2012; Dow et al. 2013; Huggel et al. 2013). With this grave apprehension, a policy framework for preparing for the inevitable losses and damages entered negotiations in 2010 (UNFCCC COP 2011). Looking ahead to the 2013 UNFCCC meetings where institutional arrangements for a loss and damage (L&D) mechanism are on the table for negotiation, climate adaptation policy has given birth to a new climate policy regime (UNFCCC 2013).

The main irony of L&D policy (an increasingly ubiquitous narrative) is that many of the systems where historical livelihood systems and modes of life are most threatened have played a minimal role in the production of GHGs. As the L&D paradigm has emerged, vulnerable and Least Developed Countries (LDCs) like Bangladesh, the Gambia and the Alliance of Small Island States (AOSIS), in particular, have registered specific perspectives and concerns about the shape the policy mechanism will take, and its implications to them (UNFCCC SBI 2012a; UNFCCC SBI 2012b; UNFCCC SBI 2012c). At present, the picture of the mechanism, based on recent dialogues and consultations, will likely be a composite of existing adaptation, disaster response and insurance models (i.e. risk reduction, risk retention, risk transfer, and post

disaster assistance) (UNFCCC SBI 2012d; UNFCCC TP 2012). The general concern of most vulnerable nations is that climate change is unlike the environmental threats which these tools are best suited for several reasons. First, the polluter pays principle may not apply. GHGs are an externalised cost of the global North's economic development strategy; however since climate change arises from past emissions that started long before the effect of GHGs was understood, establishing liability in order to trigger compensation is both politically untenable and practically implausible (UNFCCC SBI 2012e). Furthermore, global climate change and its impacts cannot be considered a one-off disaster or even as a series of events, which can trigger discrete responses to "actual or potential manifestations of climate change impacts that negatively affect human and natural systems," as L&D is defined (UNFCCC SBI 2012d, p. 4). Rather climate change is an intensifying, cumulative, and compounding set of social-ecological feedbacks that may be centuries in the making.

Adverse effects of climate change may also fold into other ongoing societal transformations, such as demographic transition, political instability, or conflict (Black et al. 2011). Moreover, loss and damage will occur amidst sustained efforts and investments to mitigate and adapt to impacts (both autonomously and centrally planned), and thus, L&D policy will entail trade-offs and synergies for other plans and activities (UNFCCC SBI 2012d; UNFCCC TP 2012; UNFCCC EM 2012). Lastly, climate change will drive non-economic, cultural and cascading losses that defy quantification (a specific area of concern raised in Oliver-Smith & Morrissey 2013). As such, the concern is that L&D policy will merely and clumsily aim at reconstituting pre-event conditions at specific scales, instead of targeting the long-term structural conditions that produce social vulnerability vis-a-vis climate risk, and inhibit human development to begin with (UNFCCC SBI 2012b; UNFCCC SBI 2012c). Together these issues raise a concern, voiced by vulnerable countries, that a L&D mechanism will neither be adequate nor sustained through time in order to rehabilitate and protect against future risks as they continue to unfold (CPRD 2013).

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This paper aims specifically at addressing these registered concerns implicit to L&D policy as articulated by the most vulnerable countries. Far from self-explanatory, L&D policy is a concept that needs scrutiny and interrogation. The purpose of this paper is not to reject or to undermine a potentially important policy paradigm for dealing with manifesting loss and damage, but to clarify its meaning, to warn of possible misinterpretations, and to raise conceptual and practical concerns. The paper begins by tracing the development of the concept, its use in risk-transfer contexts, and its use and definition in the UNFCCC. The paper then lays out some of the general challenges of the L&D approach, as applied by the insurance industry, disaster responders, and development institutions. Following this, the paper outlines important operational and conceptual challenges to applying the concept to the specific question of climate change impacts. The paper concludes with some general guidelines to policy makers for crafting L&D into a workable policy that affords a manner of compensation and a means of rehabilitation to those nations and peoples, who despite being the least liable for climate change, are the most exposed to its impacts (UNFCCC COP 2013).

2. Loss and damage policy alternatives:

The policy residual that justifies L&D

This section reviews the short genealogy of the two principal policy paradigms invoked around L&D to anticipate the potential shape of a future mechanism. The complete history of L&D in climate policy has been traced in other works and it is not the intention of this paper to treat this in depth (Warner & Zakieldeen, 2012; Warner et al., 2012a; Roberts 2012). In broad terms, the policy problem that L&D poses in our context is that a policy residual exists between climate change adaptation (CCA), disaster risk reduction (DRR), and public/private risk transfer. Climate change is expected to generate conditions that can neither be mitigated nor adapted to, nor insured against. These may be stresses that overwhelm human systems and trigger permanent physical displacement (or resource

displacement), migration, resettlement, and abandonment of systems that no longer afford the necessary inputs for human wellbeing. L&D also implies that DRR is inappropriate as the changes involved are successive, progressive, accelerating and permanent (from the perspective of human timescales). Lastly, L&D implies that insurance mechanisms are unable to cover the collective losses entailed, such as cultures, languages, indigenous knowledge systems, livelihood practices, social networks, and statehood. It is extremely problematic to imagine clear circumstances where loss and damage will be incurred, but generally, these are systems that are becoming characteristically unproductive and uninhabitable.

Loss and damage is the policy domain where existing mechanisms are not enough to prevent private and collective loss and damage, or to ensure human welfare. L&D implies that climate change will require new life systems. In analogous circumstances, this will entail relocation and resettlement schemes, which are potentially destructive social processes (particularly when involuntary) that contain further risks and losses (Cernea, 1997; Scudder, 2005, 2009; Oliver-Smith, 2005, 2009). The challenge is to devise policy that can break the clear pattern of downward social mobility identified. What will be the basis for that policy?

The compensation model for L&D

The clear directive that guides L&D policy is built around the term “adverse effects” first employed in 1992 at the Earth Summit (the Rio Declaration on Environment and Development). Here at the genesis of discussions of climate change impacts, this language was invoked in principles 13 and 16 (the so-called polluter pays principle) in which signers agreed “states shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for **adverse effects** of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction” (UNEP 1992, emphasis added). The same language has been consistently invoked, including the inauguration of L&D policy, the 2010 CAF, where a special working group was tasked to “understand and reduce loss and damage associated with the **adverse effects** of climate change (again emphasis added).” The text of the CAF elaborates that adverse effects may include impacts from either extreme weather or slow onset events including sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest

degradation, loss of biodiversity and desertification (UNFCCC 2011, p. 6). There is an important shift in these policy approaches from a liability and compensation model that emphasises responsibility for stress to a hazards approach that aims to adjust to the mechanics of environmental stress.

Policy mechanisms based on these different orientations would be sure to include distinct features. If history is any guide, the former model would follow precedents established in courts of law, which judge liability and award compensation wherein the polluter pays. Several well-known precedents exist in the environmental justice literature illustrating this orientation. For example, there are numerous cases in which industrial activities have resulted in environmental contamination that drove negative social impacts. The most famous cases include the illegal dumping of Polychlorinated Biphenyls (PCBs) that differentially exposed African American communities to health risks; petrochemical extraction and transport catastrophes such as the Exxon-Valdez oil spill in Alaska, and the BP oil spill in the Gulf of Mexico; and criminal negligence of Union Carbide which resulted in the deadly gas disaster Bhopal, India. In these and numerous other cases, polluters are discrete entities, their legal negligence is well-documented, and losses and damages can be clearly attributed to wrongdoing. In contrast, due to the complex relationship between industrialization, the production of GHGs and climate impacts, a judicial court on climate impacts is neither practical, nor is this model politically feasible in UNFCCC or international decision-making bodies in general.

Nevertheless, even despite carefully managed implementation, the compensation model has failed to function effectively. In development forced displacement and resettlement (DFDR) compensation is considered to be a failed strategy (Cernea and Mathur, 2008). In the best of circumstances, it generally fails to establish previous levels of well-being and leaves people impoverished. Consequently, the shift in DFDR has moved away from compensation toward a model focusing on social investment and development. Indeed, whereas DFDR compensation can be carefully managed to engage with the conditions of impoverishment and inequality (by prioritizing poverty reduction, health, education and empowerment), compensating in the context of climate change is much more problematic. First, over historical timescales development strategies have produced social structures that orders specific exposure and

vulnerability to climate change. So exactly what is being compensated? The assets lost in discrete biophysical processes, or the systematic capture of surplus over historical timescales? This point is not generally apprehended in the climate change literature. A compensation-based mechanism may yet have a role in addressing loss and damage outside of UNFCCC, and the approach is treated in depth in elsewhere (Bronen 2012), but will not be explored further here.

A more likely approach to L&D: risk management

Setting compensation aside, the policy mechanism much more likely to be adopted given discussions and input to this point will be based in the hazards approach, oriented around risk reduction, risk retention, risk transfer, and post-disaster assistance (UNFCCC SBI 2012d; UNFCCC SBI 2012e; UNFCCC SBI 2012f; UNFCCC SBI 2012g; UNFCCC TP 2012). The likelihood of adoption became stronger in 2011 discussions at Durban, where a working group was tasked with studying the risks that countries will experience loss and damage, building expertise for addressing loss and damage, and anticipating the range of policy instruments available to the UNFCCC (Warner et al., 2012b). The task was to determine which range of approaches were possible to establish that loss and damage have occurred and to address those losses and damages, given the current institutional landscape (UNFCCC SBI 2012d; UNFCCC SBI 2012f). Climate Change negotiations in Doha in 2012 centered on the character of potential institutional mechanisms that would be nominated for Warsaw 2013. The character of these discussions focused on existing tools for dealing with environmental impacts that foreclose adaptation (Warner et al., 2012a). In general proposed approaches are envisioned as synergistic complementarities that treat loss and damage internally, respecting sovereignty and diverse national approaches, rather than as a matter of compensation from externally imposed stress for which liability can be assigned (UNFCCC SBI 2012d; UNFCCC TP 2012). The focus on risk reduction, risk retention, risk transfer, and post-disaster assistance relies on DRR approaches.

The full range of proposed tools will not be treated here. Each of these approaches is dealt with in extensive respective research literatures and, indeed, they structure the world we live in through public policy and private practices. In the simplest of terms, risk reduction is the host of activities, including early

warning, forecasting, and land use planning *inter alia*, that aims to analyse and manage the causality of disaster risk (IPCC 2012; UNHCR GAR 2011). Somewhat related is risk retention, which includes the range of internal policies that countries have for self-insuring to build general social resilience including disaster reserve funds and social insurance mechanisms (UNFCCC SBI 2012d). The private sector and public-private partnerships can also play a role through risk transfer mechanisms that spread or dilute costs of environmental risk over a wide set of actors. Insurance, for example, is based on the notion that all similarly vulnerable actors will pay an actuarially equivalent price, even though not all will suffer. The benefit of an insurance model over an ad hoc disaster response model is that insured beneficiaries enjoy a guaranteed right to post-disaster compensation, which is tied to contribution into an insurance mechanism. This reduces uncertainty, defines financial responsibilities and establishes resource transfer mechanisms (Warner et al. 2012a). Even after all of these measures are employed, an increasing part of the social contract that governments make with their citizens for dealing with risk includes the contingency for post-disaster response. When governments cannot meet internal obligations due to resource constraints or other factors, then international organisations and international non-governmental organizations (INGOs) often step in to protect against humanitarian crisis. Negotiations to this point envision a policy regime based on these risk management tools. By no means diminishing their significance in dealing with climate risk, it is noteworthy that, as these documents frame policy alternatives, the locus of stress and response *in situ* at the national level.

3. Problematising L&D

The hazards-oriented tool kit recommended for managing loss and damage has uses in many contexts of environmental stress as a method for safeguarding assets, assigning responsibility for impacts and recouping investments, where risks can be clearly identified and measured. However, there are both operational and conceptual concerns that should be raised before a policy mechanism is consolidated further both for managing climate related disasters and ongoing, cumulative climate change impacts. The discussion that follows recognises the substantial overlap between conceptual and operational problems, the complexity of the issues, and impossibility of precisely distinguishing between the two. Nevertheless, broadly speaking the **conceptual**

concerns aim at the basic suitability of these tools for the specific challenges of climate change. The **operational concerns** deal with making certain that policy implementation reflects the policy problem to arrest adverse impacts of climate change, and accommodate and rehabilitate those affected. Operational problems are primarily concerned with implementation in areas such as valuation and assessment, delivery and distribution and impacts of loss, damage and assistance in internally differentiated communities.

4. Conceptual concerns:

The essential conceptual problem deals with the unique nature of climate change as a source of environmental stress. Climate change presents stresses that are cumulative and compounding, incremental, unstable and dynamic through relatively long historical time scales over large spatial scales (IPCC 2012). And yet impacts are non-linear and manifest at local scales (*ibid*). It is extremely problematic establishing starting points and ending points in climate change as a process and thus assigning attribution in realised impacts is, in many cases, virtually impossible (Huggel et al. 2013). There is a higher degree of certainty about what will be lost and damaged in the near term, but substantial uncertainty about what must be protected in the decades and centuries to come. Climate change impacts are fundamentally unlike discrete environmental disasters, nor can they be seen as a series of events, and thus disaster orientations are fundamentally inadequate for assessing climate change impacts. However, both DRR and CCA still represent viable options for reducing risk of both disasters and climate change effects when they engage effectively with local conditions of vulnerability.

Furthermore, with climate change, the experience of loss and damage is not exclusively tied to disasters or “events,” but rather they occur slowly over the course of time. Numerous cases have been catalogued in which there is no apparent crisis, thus providing time for adjustment. In such cases, the loss of livelihoods is damage, but may contribute to further losses. The problem is that in cases like these, losses and damages, though fundamental, can be adapted to in some measure. One example presents the case of ocean acidification, which results in a thinning of clam shells, and a reduction in the clam population. This effect, in turn, threatens the livelihoods of a sliver of the coastal population in south western Jamaica. Here we see both damage and loss that do not qualify as disaster, and in

fact, are barely observable if not explicitly considered. In the same coastal communities, households that rely on agriculture may resume life unaffected by ocean acidification. However, certain losses (and adaptations), like the abandonment of homelands, cultural practices, languages and livelihood bases over a relatively long timescale, while tolerable to some, may be utterly unacceptable to others. In the end, it is extremely difficult to differentiate between adaptation and loss and damage, when the experience is not tied to a specific event. Should then L&D only address circumstances where systems are rendered uninhabitable and unproductive? These ambiguities have been addressed to some extent in policy, namely the need to account for non-economic and cultural losses incurred through exposure to climate impacts (UNFCCC COP 2013).

Climate change is a unique source of environmental stress in a second sense since impacts cannot be precisely separated from concurrent environmental degradation. In fact impacts often manifest because of local environmental practices, as in the case of deforestation, intense tropical rainfall and catastrophic flooding. Furthermore, other adaptive and maladaptive activities related to climate change feedback on and tradeoff with climate stress to produce and damages. For example, climate models of Central America predict a future characterised by increased frequency and intensity of tropical rainfall (Knutson et al. 2010). In the current active decadal cycle (which still cannot be decisively linked to climate change, see Bender et al. 2010), a major cyclonic event has affected the region in every year of the last 15. Some of these storms, such as Hurricane Mitch in 1998, which displaced a quarter of the population of Honduras, have been absolutely devastating. Central America provides a perfect illustration of the conundrum: although modeled futures predict a stormier future, which storms can be attributed to climate change and which cannot? Even if we can determine attribution, which specific flooding events are attributable to climate change and which to deforestation? This is a significant challenge for L&D.

Double exposure also complicates L&D. Given that climate change is a temporally and spatially broad source of environmental stress, and a driver of social-ecological change, a return to the hazards approach risks limiting the analysis to surface conditions. Over the last 40 years, research on vulnerability has broadened the temporal and spatial scales of analysis of disasters to include deeply embedded characteristics of risk, as well as the social processes that produce

exposure, susceptibility and impact (Sen 1980; Wisner et al., 2004). A broad body of work is concerned with states of marginality, enfranchisement and empowerment that create ongoing crises, which environmental stress merely transform into disaster (see for example Watts & Bohle 1993). A focus on disasters (or environmental crises) as outcomes returns policy to an outdated approach, which overlooks root drivers and the social causes of those drivers. While climate change stress may reveal itself in “crises,” vulnerability is a latent social condition, and the historical nature of vulnerability is that some had already experienced loss and were damaged through the process of colonization and development in the 20th century.

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But double exposure raises a more significant point: since damage and loss is concerned with restoring and rehabilitating, it is deeply problematic to reconstitute dysfunctional, inequitable structures that produce vulnerability to begin with, instead of dealing with basic structural issues of vulnerability. The suggested L&D mechanisms focus on hazards but contain no imperative for transformational structural change. They do not implicitly entail any strategy or alternate development model that foregrounds poverty reduction, social protection and environmental security ahead of business-as-usual economic growth. Addressing only the biophysical effects without working toward fundamental climate-resilient development may only reinstate original conditions of impoverishment and vulnerability. While there is not space here for the lengthy debate on alternative models of development, the current formulation of L&D does not mitigate against the repetitive, routine, cyclical losses and damages that may erase development in light of climate change.

Conceptually, the absence of structural transformational strategies relates to the original irony of L&D: the problem of liability for GHGs and compensation for climate change impacts. The ratification of any policy could potentially undermine the policy’s original intent of internalising the cost of

GHG-generated impacts by requiring polluting countries to assist in the protection of impacted countries. The aforementioned tools that are invoked have been developed to identify environmental harm and trigger a mechanism for resources, without a specific mandate to hold polluting parties responsible. Nevertheless, by accepting this form of compensation, which is problematical in its own right, impacted countries implicitly absolve polluting countries in perpetuity from a legal perspective. Given current international politics and the state of UNFCCC policy, and the complexity of the problem, perhaps it is unrealistic to expect any alternative.

5. Operational problems:

These conceptual issues have an operational dimension that leads inevitably to concrete practical problems that if not resolved will pose serious obstacles for the efficient and effective implementation of the L&D framework. Operational problems are primarily concerned with implementation in areas such as valuation and assessment, delivery and distribution of assistance in internally differentiated communities. It will clearly be necessary to construct and effectively deploy some means of establishing the nature of the losses and addressing the needs created by those losses. How should specific losses and damages be recognised and addressed within a formal policy framework? From a quantitative perspective, in circumstances in which market values reign, where most things enter the market as goods and services to be exchanged in money at the price arrived at through the intersection of supply and demand it is a fairly straightforward process, though not without its occasional complexities. The global market-oriented value system assumes the detachability of persons and things.

The counting of value inherently assumes the exclusivity and alienability of property, essentially that all property value is quantifiable, that property is fungible, that all forms of property are inherently convertible into other forms of property. Methodologically, quantification is an economic knowledge paradigm that allows us to convert material value into money, and vice versa. While this may be appropriate for stocks and flows of commodities like rice, even in a market society, the affective attachment that people assign to singularly unique things and places cannot be entirely eroded. Counting and compensation also normatively suggest that environmental, personal and cultural goods and

services can be subsumed into a liberal conception of property rights, with rights of exclusivity and alienability. But things, both material and non-material, that do not enter a price-making marketplace cannot always be quantified and compensated in the same fashion. In this understanding land is a commodity that can be exchanged for money in the market. But if that is not the case, as in many indigenous and traditional societies, where land is held under traditional forms of tenure, how will that compensation be arrived at? Here the issue of quantification and the desired reduction to a common *numéraire*, so central to global economic metrics, becomes challenging.

There are various economic methods through which the assignment of quantitative measures to qualitative forms of loss is carried out. Originating from economics, the calculus known as Cost-Benefit Analysis (CBA) basically measures the costs and benefits associated usually with a development project and then adds them up to see which is larger, which then serves as a guide for decision-making (Adams, 1996: 2). Cost-Benefit Analysis requires some common standard of measurement for the appropriate calculation to yield the quantitative, objective result. There has to be a single property possessed by all things, conditions or states of affairs that is considered to be the source of their value (O'Neill 1996: 98).

In effect, money is most frequently considered to be a convenient means of representing the relative values that society places on different resources and practices. Money values or prices are usually arrived at by the modified or unmodified intersection of supply and demand in a marketplace. Therefore, for non-market losses a method known as contingent valuation is used to access how people would monetarily value non-market items. In Contingent Valuation, people are asked how much they would be "Willing to Pay" (WTP) for the things the analyst is seeking to value if they were for sale (Adams, 1996:2). Willing to Pay works best when people are asked about benefits. However, in cases where people have experienced loss and damage, the question revolves more frequently around how much money would a person be willing to pay to prevent losses or willing to accept (WTA) as compensation for losses. These questions are not simply inversions of each other. They elicit manifestly different responses. On the one hand, asking a person how much they would be willing to pay to prevent a loss is constrained by that person's ability to pay. On the other hand, asking a person how much they would be willing to accept as compensation for a loss elicits

what economists have characterised as “unrealistically high answers” (Adams, 1996). Willing to Pay is generally preferred, for reasons of sound economy.

Cost-Benefit Analysis thus has proved inadequate for assessing costs that are real, but impossible for quantifying costs such as the losses experienced in the breakdown of community or the loss of cultural or spiritual resources. Other critics of CBA (Adams, 1996; O’Neill, 1999; Espeland, 1998) contend that CBA distorts the values that people attach to both natural and cultural resources. However, it is by no means a simple matter to ascertain where and in what aspect of their lives people lose resources and become materially impoverished. Indeed, a simplistic approach toward this issue is largely responsible for much economic injustice and impoverishment. In addition, people generally are not compensated for less tangible assets than land such as access to markets, communal property resources and social networks (Fisher, 1995: 32). The loss of jobs or livelihoods is more than the loss of the means to make a living that can be replaced by another means. For many people, the loss of livelihood is the loss of a way of life and a way of defining the self. Simply assuming that people who have spent their lives defined by a form of livelihood can easily shift to another is to reduce human life to mere labor power, something that is quite facile conceptually in economic theory but proves to be quite traumatic in real life.

Cultural resources prove to be particularly problematic because they embody a plurality of values. What is the value, as opposed to the price, of the burial grounds of the ancestors lost through submergence by sea level rise? The outrage that frequently results from such a query represents an intractable problem, known as Constitutive Incommensurability that increasingly confronts the discourse of Cost-Benefit Analysis (O’Neill, 1999). That is, there are some objects, places, conditions or states of affairs that are constituted by certain shared understandings that are incompatible with market relations on moral or ethical grounds (O’Neill, 1999). The problem resides in the fact that price is constructed in the intersection of supply and demand in a market and value is a reflection of the importance of things for the role they play in human relations.

Recent work carried out in relation to development forced displacement points to the need for reparations for people whose losses have never been appropriately compensated (Johnston 2000, 2009). However, people are often offended that anyone would suggest that

they would surrender the burial grounds of their ancestors, their sacred forests, their holy river, or other such features for a compensatory payment. On the other hand, in the case in which the damage has already been done; the sacred forest and the hallowed graveyard inundated, the holy river drowned, a compensation payment may not be appropriate since it places a monetary metric on an element that has enormous cultural value that cannot be expressed in a price. Can money payments ever come close to addressing, much less making good the true nature of the loss? It can be argued that reparations simply unburden the offenders of their guilt by converting the loss into a form that can be addressed by a payment that then relieves those responsible of all further obligations.

Reparations, however, come in many forms. Some distinguish between reparations and settlements.

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Reparations are intended as broad forms of redress that express atonement for actions or conditions of injustice and include a statement of apology. Settlements are more narrowly defined as payment transfers that express no concession of wrongdoing or apology (Brooks, 1999: 436; Boutte, 2002: 42). Reparation is defined as action or process that repairs, makes amends, or compensates damages. Legally, there are basically three forms of reparation: restitution, indemnity (or compensation) and satisfaction. Restitution is defined as a return of the offended state to its former condition prior to alteration. Such action might include restoration of a damaged eco-system or

lost resources such as water or fisheries. Indemnity, also referred to as compensation, involves the payment of money to the injured party for losses experienced by destructive acts or processes, including property or opportunity lost (profit for example).

At the individual level, reparations or settlements are usually intended to be compensatory. At the community level, such transfers are designed to be rehabilitative (Brooks, 1999). In the case of community, as opposed to individual losses, indemnity payments can be used to fund resettlement plans or develop projects that address community needs. Satisfaction addresses primarily non-material damage such as formal apology for losses sustained. In terms of entrained environmental processes that impose losses and damages and violate human rights, satisfaction might include public acknowledgements of wrongdoing and formal apologies to those who suffered losses and damages. Such demands for admission of culpability often figure highly in the agendas of local people as actual material transfers. However, satisfaction might also include damage awards for hardships experienced as outcomes of long-term effects of the original violation (Johnston, 2000).

The delivery and distribution of assistance is a challenging task in any context in which it is undertaken. Post-disaster aid and aid in development forced resettlement projects have been consistently plagued by problems of duplication, inefficiency, inappropriateness, and corruption. In addition, not only are prior economic valuations and social, cultural and environmental assessments required, but the determination of appropriate forms of assistance for the kinds of loss and damage that have occurred as well as the mechanisms of delivery and distribution must be in place before any actual forms of aid are transferred. These problems are very often rooted in attempts to employ and impose uniform standards of both loss and damage and generalised templates for delivery/distribution across administrative units, countries and regions without regard for cultural and social particularities or levels of development. Moreover, decisions on delivery and distribution must take into account present and future projections about various societal and environmental trajectories including greenhouse gas emissions, demographic change, migration trends, infra-structural development, mitigation strategies, adaptive capacities, vulnerabilities and patterns of economic change must also figure in our calculations in all the possible ways they will play out within the political,

economic and socio-cultural frameworks of national governments, international organizations and general populations. The complexity of interaction of these factors illustrates and underlies the challenge that will be faced by decision makers in crafting delivery and distribution mechanisms for aid for loss and damage from climate change.

The L&D Framework must also deal with the differential impact of aid on the recipient community or society. This is an old problem. At the current level of conceptualization, there appears to be an unwarranted assumption of homogeneity among potential recipient communities. One recurrent theme in disaster and displacement loss is the issue of relative loss and deprivation, often coupled with accusations of unfairness and dishonesty in the representation of individual loss. Loss will be distributed unequally in a community just as vulnerability is differentially constructed, often along class or ethnic lines. In effect, aid donation and reception are viewed from subjective perspectives. Donors and administrators of aid most often see the purpose of their efforts to restore everybody in the affected community to a minimum level of self-sufficiency. Certain groups may see the purpose of aid as the replacement of losses. The L&D framework will need to be especially sensitive to the “need versus loss” issue because it holds serious potential for exacerbating or creating serious social tensions within the recipient community. There is also the danger that programs may adopt standards that favor one group over another. For example, a consistent problem is development forced displacement and resettlement is compensation only for formal land title holders, leaving renters, sharecroppers, and other forms of traditional tenure without access to necessary resources, strengthening the already strong and weakening the already weak.

6. Conclusion: Future models for L&D

L&D policy does not risk reintroducing a discarded paradigm, but rather it attempts to introduce the model that has served to safeguard highly industrialised economies and societies from environmental harm. This paper raises questions about what is not considered in this western paradigm for risk management if adopted more widely across the vulnerable developing world in the specific instance of climate change impacts. There are other questions that have not been raised in this paper. Who defines loss

and damage in a society? Are the assessments done by outside experts? Is it possible to define loss and damage universally? Do such assessments take into consideration relevant loss and damage to specific peoples?

Ultimately, L&D suffers a nearly identical core challenge of adaptation policy, which emphasises maintaining the same conditions in the face of climate change. Currently, adaptation policy and the external resources made available are channeled through human institutions with specific political economies that have differential benefit for asset- and land-holding tiers of society (Adger et al. 2005). However, for the lower rungs of the social strata that slip into landlessness and impoverishment, adaptation is autonomous, undertaken with a diminishing set of resources, with external inputs for adaptation beyond reach (Agrawal 2010). For the world's poorest, adaptation policy is short on effective tools. In fact, the concern of L&D in practice is that by affording resources to relatively wealthy, it becomes a mechanism for splitting the social strata further. In the end, for the most vulnerable tiers of society, adaptation (maintaining the same essential conditions) and L&D (returning to the previous essential conditions) does not imply or entail any fundamentally transformational change in circumstances, and is therefore ultimately undesirable.

Have we been creative enough in imagining policy alternatives? The losses and damages we can expect to occur with climate change, including indigenous knowledge systems, social networks, and even perhaps languages, are significant enough to attempt more. These aspects of human diversity comprise the non-material wealth of our planet's peoples, and the risk of climate change is that we may lose these aspects of diversity that afford us our fundamental identities, that tell us who we are, and give our lives meaning. Given the stakes, it is our conclusion that more transformative approaches ought to be considered, which prioritise the most impoverished, marginalised and disenfranchised peoples – those most vulnerable to climate change (as well as global social, economic and environmental change in general). In this way, L&D can become an instrument for building peoples' rights, entitlements, capabilities and thus human development in the face of the inevitable impacts of climate change.

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