Background document #5

Actions to respond to climate change-driven 'loss'

Climate change-driven loss, often termed non-economic loss, refers to negative climate change impacts on goods, services and amenities that are not commonly traded in markets (Background document #1). Examples of such impacts include the loss of species or the loss of cultural heritage, among others (Tschakert et al, 2017).

Climate change-driven losses are underpinned by values. Since values change across communities and even individuals (Henrique and Tschakert, 2022), and value trade-offs are commonplace (Henrique et al, 2022), climate change-driven loss is a dynamic phenomenon, which may hamper efforts to respond to it, not least because practical experience with responses to loss remains limited.

Based on input collected through a series of interviews with issue-specialists (Annex 1), who draw their knowledge mostly from empirically based research, **this document collects possible responses to climate change-driven loss**. In the interest of clarity and detail, "loss" is broken down into five themes: biodiversity and ecosystem services; cultural heritage, and indigenous and local knowledge; human life, health and wellbeing; identity and ways of being; and territory.[1]

Theme-specific observations

For each of the themes mentioned above, Table 1 lists the main responses reported by the interviewees. Annex 2 provides additional details, per theme.

Table 1:   Response actions reported by the interviewees

Theme	Ex-ante action	Ex-post action
Biodiversity and ecosystem services	- empowerment through positive action – from individual behavioural choices related to diet and travel habits, to farther reaching measures - mental health support, in the context of the distress people suffer before inevitable loss and after irreversible loss	
Cultural heritage, and indigenous and local knowledge	- memorialisation	
		- monetary compensation (*) - non-monetary reparation (*)
Human life, health and wellbeing	- communication (between the community and potential support providers) - building and sustaining a sense of community - integrated approaches that mainstream health support services, including mental health	
Identity and ways of being	- social integration measures - livelihood support measures	
Territory	- planned relocation - assisted migration	- income support programmes - social integration measures
	- establishing an international legal framework	

(*) if and as relevant

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[1] Building off an initial categorisation of loss that included 27 themes (Tschakert et al, 2017), researchers have produced shorter, more policy relevant categorisations, such as two recent examples, covering eight (McNamara et al, 2021) and five (McNamara, Westoby and Chandra, 2021) themes, respectively. The categorisation used in this document draws on those used in these two recent examples. It seeks to strike a balance between full coverage of all issues, and the existence of experts on any one theme included in the categorisation.

It is important to note that actions to respond to climate change-driven loss of human life, health and wellbeing involve both non-psychological assistance (to deal with physiological conditions and, in some cases, premature death), and psychological assistance (to deal with mental distress). Since the latter is relevant to all five themes considered in this document, including the theme focused on human health, increased emphasis on, and funding for, psychological assistance seems warranted, noting that, in some context, so-called nature healing and slow healing, and strengthening social bonds may be more suitable solutions, compared to clinical psychology.

A similar observation can be made regarding actions to build and maintain social cohesion: they are relevant across all themes. What is more, even if response actions can only achieve modest results, they tend to strengthen social cohesion, which is a positive outcome in itself. As one interviewee put it, "restoration efforts won't bring back all lost species, but help bring communities together".

Exclusively ex-post response actions have only been identified for the themes "cultural heritage and indigenous and local knowledge" and "territory" (Table 1). Regarding "territory", integration of the ex-ante and ex-post actions identified is already commonplace (for example, planned relocation programmes often include income support and social integration measures). Regarding "cultural heritage and indigenous and local knowledge", integrating ex-ante and ex-post actions is arguably unproblematic when it comes to folding non-monetary reparation actions into memorialisation initiatives.[2] In sum, there seems to be a case for developing integrated response actions, namely actions that provide for both ex-ante and ex-post needs.

Cross-cutting observations

Three cross-cutting observations emerge from the summary presented in Annex 2:

- With no exception, all interviewees stressed the importance of having affected individuals and communities drive the process to identify response actions. As one interviewee put it, across world regions "response measure must be articulated through a community-centred process, which makes it possible to (i) understand what people value and why, and the connection between what is valued and [the type of loss concerned], and (ii) identify the resources communities require to respond to loss".

- To a greater or lesser extent, the notion of climate change-driven loss involves inevitability. This association is problematic because, implicitly – and in some instances explicitly – it locks in certain futures, by pre-empting outcomes and discouraging, or outright precluding response measures. For this reason, and especially on issues about which science is inconclusive, avoiding this association may be warranted. In the context of adopting actions to respond to climate change-driven loss, the inclusive, community-centred types of processes referred to in the previous paragraph are a necessary but not sufficient condition for avoiding this association.

- Unsurprisingly, most response actions related to climate change-driven loss involve the type of support that is provided by non-governmental social-service providers or social care government agencies – as opposed to entities that have responsibilities in environment and climate change. (Efforts directed at establishing an international legal framework related to loss of territory are a notable exception.) Whether these providers of social care –non-governmental or governmental as the case may be – are prepared to take on such

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[2] The option of folding monetary compensation actions into memorialisation initiatives appears unlikely, for two reasons. First, monetary compensation is rare and, in many cases, discouraged on ethical grounds. Second, memorialisation programmes tend to take place much sooner, compared to monetary compensation.

responsibilities will vary from one country to the next. Nonetheless, closer coordination between providers of social case and the entities managing climate change can only be beneficial.

References

Henrique, K. P., & Tschakert, P. (2022). Everyday limits to adaptation. *Oxford Open Climate Change, 2*(1), kgab013.

Henrique, K. P., Tschakert, P., du Coudray, C. B., Horwitz, P., Krueger, K. D. C., & Wheeler, A. J. (2022). Navigating loss and value trade-offs in a changing climate. *Climate Risk Management, 35*, 100405.

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

McNamara, K. E., Westoby, R., Clissold, R., & Chandra, A. (2021). Understanding and responding to climate-driven non-economic loss and damage in the Pacific Islands. *Climate Risk Management, 33*, 100336.

Tschakert, P., Barnett, J., Ellis, N., Lawrence, C., Tuana, N., New, M., ... & Pannell, D. (2017). Climate change and loss, as if people mattered: values, places, and experiences. *Wiley Interdisciplinary Reviews: Climate Change, 8*(5), e476.

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Annex 1:   Interviewees

The author wishes to thank the eleven interviewees, whose agreement to provide input does not imply endorsement of the statements made in this document. Any errors or omissions are regretted, and remain the author's sole responsibility.

Table 2 lists the eleven interviewees. They were selected through a two-stage process. First, based on his own knowledge of the loss and damage research, and with continued input from Karen McNamara (Acknowledgements), the author identified two potential interviewees for each of the five themes considered. Second, each of these individuals was asked to suggest one additional potential interviewee. Availability determined the final selection of interviewees.

The selection of themes was based on the different types of climate change-driven losses document in the scientific literature (Footnote 1). Selection criteria included complementarity across themes and full coverage of all relevant topics. Overlaps across themes were useful in highlighting linkages and underlying trends.

Table 2:   Interviewees, by theme

Interviewee	Theme
Jeff Price (University of East Anglia)	Biodiversity and ecosystem services
Rachel Warren (University of East Anglia)	Biodiversity and ecosystem services
Guy Jackson (Lund University)	Cultural heritage, and indigenous and local knowledge
Kyle Whyte (University of Michigan)	Cultural heritage, and indigenous and local knowledge
Katie Hayes (climate change and mental health researcher)	Human life, health and wellbeing
Kristie Ebi (University of Washington)	Human life, health and wellbeing
Susan Clayton (The College of Wooster)	Human life, health and wellbeing
Chandni Singh (Indian Institute for Human Settlements)	Identity and ways of being
Petra Tschakert (Curtin University)	Identity and ways of being
Kees van der Geest (United Nations University)	Territory
Tammy Tabe (East-West Center)	Territory

Annex 2:   Theme-specific details

The following paragraphs synthesise some of the feedback provided by the interviewees. For each theme, context is provided, followed by the response actions suggested by the specialists interviewed. Wherever relevant, information on response actions distinguishes between ex-ante and ex-post action.

Biodiversity and ecosystem services

At present, we know reasonably well what measures are insufficient or even counterproductive to prevent or delay the loss of biodiversity.[3] [4] Conversely, our understanding of the types of measures that might be effective remains limited.[5] For this reason, removing non-climatic stressors to biodiversity loss is a key action to consider with regard to preventing or delaying biodiversity loss. Nonetheless, significant biodiversity loss is projected in all climate forcing scenarios.

Against this background, measures to manage likely-future loss (that is, ex-ante measures) and loss that has already occurred (that is, ex-post measures) focus on psychology and behaviour. This focus is justified because, in addition to its instrumental value, biodiversity has an intangible value, especially in the context of mental health.[6]

Empowerment through positive actions is relevant both ex-ante and ex-post. Simply stated, the anxiety that biodiversity loss causes in many people, especially youth, can be channelled into positive action – from individual behavioural choices related to diet and travel habits, to farther reaching measures such as having pension funds divest from carbon intensive industries.

Mental health support constitutes a second type of response measure. It is relevant both ex-ante and, especially, ex-post.

Cultural heritage, and indigenous and local knowledge

Debates about heritage conservation in the Global North narrowly focus on material heritage and culturally important landscapes, whereas the same debates are comparatively farther reaching and more complex in the Global South, especially in the context of indigenous peoples, for whom immaterial heritage is a key aspect of daily life. Not surprisingly, then, views on relevant responses change across world regions.

Ideally, responses to loss should be anticipatory, because reactive responses are likely to be more challenging, and they may inadvertently miss the mark. Memorialisation, whether conducted ex-ante or ex-post, appears to be a common type of response.

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[3] There is no evidence that ecological corridors constitute a credible ex-ante response to loss, because of the fast pace associated with climatic impacts. Similarly, habitat restoration will only be an option if restoration efforts can keep up with the pace of change. However, if restoration is not based on natural habitats, biodiversity loss will only be exacerbated. Finally, experience with relocation shows that it is not a solution, in that introducing new species has rarely bode well for native species.

[4] On a related point, it is increasingly clear that mitigation efforts to achieve net-zero emissions, notably biodiversity with carbon-capture and storage, can contribute to biodiversity loss.

[5] Although establishing buffer zones and expanding protected areas constitute no-regrets options, the extent to which they can prevent loss is unclear. Similarly, keeping genomes in a laboratory is a worthwhile pursuit, but one that has limited immediate use.

[6] Partly for this reason, financial compensation misses the point, in that nothing can make up for the loss of biodiversity when it affects personal wellbeing.

Regarding ex-post responses, three issues are worth noting. First, responses should not undermine people's agency by implicitly favouring certain choices, notably those related to what the applicable economic model should be. Second, although many will object to monetary compensation, the option ought to be considered. Third, non-monetary reparations ought to be considered too, not least when they can target the root causes of the actual loss.

Human life, health and wellbeing

National health systems face large capacity gaps in terms of both funding and qualified staff.[7] [8] Bridging these gaps is an indispensable precondition for designing and implementing effective responses to climate change-driven loss of human life, health and wellbeing.[9] Not least, bridging these gaps is necessary to increase our understanding about hitherto unknown health impacts of climatic change.[10]

Mental health support programmes ought to be designed with one main objective: helping affected communities identify the actual practical support they need, and tailor the support offer to those specific needs, which will vary from one community to another.[11] Support programmes can be provided by governments (local agencies may be comparatively more effective than their national counterparts) or civil society. Either way, commitment from the national government is always helpful, to acknowledge the problem and help manage it.

Whether ex-ante or ex-post, the two main measures that can help respond to climate change-driven loss of life, heath and wellbeing are (i) communication and (ii) building and sustaining a sense of community.[12] Communication is needed before loss occurs, for people to understand what the risks are and what can be done about them, and once loss has occurred, to ensure that the actual needs on the ground are met. Building and sustaining a sense of community involves breaking the silos

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[7] Regarding funding, developed countries have limited funds to manage climate change impacts on human health, and developing countries are worse off: less than half of a percent of all adaptation funding under the UNFCCC has gone to health. Regarding qualified staff, public health schools are only beginning to provide trainings on climate change. As a result, very few researchers and fewer government agency officials have the knowledge required to manage climate change impacts on human health.

[8] Collecting good practices that would help scale up effective adaptation options is arguably the first action that should be undertaken to bridge these gaps. Additionally, it is necessary to (i) strengthen early warning systems, as they are instrumental to manage heatwaves, and also dengue and malaria; (ii) improve mental health-impact surveillance mechanisms, access to mental-health care, and monitoring of the psychosocial impacts associated with extreme weather and climate events; and (iii) develop integrated approaches to mainstream health into food, livelihoods, social protection, infrastructure, and water and sanitation policies.

[9] For non-indigenous communities, mental health issues revolve around the loss of mementos, the distress brough about by temporary displacement, and the fear of losing one's sense of place and sense of community, and one's way of being and living. For indigenous communities, and in a displacement context, loss of connectedness to the land tends to be the main driver of mental health problems.

[10] Impaired cognitive functioning is a case in point. Cognitive abilities seem to be impaired by high temperatures, and it is feared that, beyond a certain threshold and level of exposure, there may be lasting impacts, in the sense of preventing someone from fulfilling his or her own full potential. Even though children are the main affected demographic group, adults may also be affected.

[11] Putting mental health support in the context of practical assistance, such as that provided in the aftermath of a disaster, helps remove the stigma associated with mental health issues.

[12] Building and sustaining a sense of community is challenging in the absence of pre-existing foundations. Not least, it is an effort that may feel not-so-tangible as a climate change-related action, which might deter some actors from focusing on it as a response measure.

that emerge within communities, both ex-ante and ex-post (for example, by checking on elderly or on neighbours who may have physical or mental disabilities).

Finally, it is important for the providers of emergency support (namely, those that are mobilised immediately after a crisis) to be in close dialogue with the providers of mental health support, whose time horizons are much longer. On a related matter, funding for the latter tends to end too soon, because recovery can take a lifetime.

Identity and ways of being

Identities shift, depending on the situation, and they are fragmented, in the sense that they are influenced by interconnections with others. For these reasons, it is difficult to pinpoint if and when loss of identity occurs, and the extent to which such loss might be irreversible. In this regard, "sense of purpose" or "sense of agency" may be more useful concepts, compared to "identity": seen through this lens, a limit to adaptation would be reached when one can no longer protect what one finds most valuable, because one's sense of agency falls apart.[13]

Response measures should be integrated into adaptation planning. As one interviewee put it, "adaptation planning should acknowledge that not everything we treasure today can be saved, and should thus focus on protecting what is valued most. There are undoubtedly individual preferences [and] the goal is to bring these together from the ground up and deliberate them at a collective or community level to jointly delineate desirable, acceptable, and dignified adaptation pathways."

Examples drawn from cases of relocation within India highlight the types of measures that can be adopted, both ex-ante and ex-post. A first example involves so-called social security portability, which allows migrants to access social benefits in their new location, thus avoiding the need to travel (to the area where they lived prior to relocation) for issues such as health care provision. A second example is provided by civil society-led platforms that help migrants organise cultural events and integrate in their new communities.

Territory

Loss of territory involves several drivers. Even though climate change is the main driver in many world regions, other drivers are potentially easier to manage.[14] For this reason, efforts to manage the loss of territory should not neglect non-climatic drivers, even if they are less prominent in international debates.

Typical ex-ante responses to loss are (i) planned relocation and (ii) assisted migration. Compared to the former, the process typically associated with latter allows communities to maintain a larger degree of control over when to move, where to, and how the move will be conducted.[15] Not least, assisted migration could involve a transition period, during which communities can live in both the

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[13] A person's or a community's sense of agency is negatively affected by the lack of support from other actors. Relocation driven by climatic hazards, which has been reported to erode identity and ways of being, is a case in point. In many instances, relocation programmes neglect the loss of identity and ways of being, and the onus to manage this loss is put on those who have moved, even though, arguably, there is a role for other actors, not least governments, to adopt response measures.

[14] Examples of the latter include unsustainable logging and mining, and commercial agriculture.

[15] Compared to planned relocation, assisted migration potentially involves the dispersion of communities. In this regard, it is worth noting that dispersion may have negative impacts, by weakening social cohesion.

"old" and the "new" locations. For both types of responses, a participatory process is a pre-condition for success.

Typical ex-post measures focus on social protection. These measures take the form of, for example, income-support programmes to help sustain livelihoods, and initiatives aimed at helping maintain social cohesion, which take different forms depending on the region and the specific issue.[16]

In parallel to the above measures, establishing an international legal framework for loss of territory is a matter of urgency. Such framework should be able to guide questions such as "for an island community that has lost its homeland, should access to the marine resources around the lost land remain their own?" or "for people who have had to flee their homeland, islanders or not, should they be able to keep their political agency in a new country?"

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[16] Regarding social cohesion, although the concept of "community" may be idealized, in the sense that social bonds may be weak among some community members, maintaining communities together tends to be beneficial, because existing social and cultural ties can ease the transition to life in a new location.