Addressing loss and damage from climate change in the Philippines:

Lived experiences of indigenous farmers in Atok, Benguet

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POLICY BRIEF

Addressing loss and damage from climate change in the Philippines:

Lived experiences of indigenous farmers in Atok, Benguet

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Executive summary: This policy brief addresses the complex issue of Loss and Damage (L&D), with a specific focus on indigenous farmers in Atok, a municipality in Benguet Province, Philippines. The climate crisis has disrupted traditional farming practices and knowledge systems, leading to significant economic and non-economic losses. These challenges are compounded by external pressures such as the influx of imported vegetables and unregulated market pricing, which undermine local livelihoods. The brief emphasizes the need for community-based risk-sharing systems, better government support tailored to highland farmers, and integrating indigenous knowledge into climate adaptation planning. Policy recommendations include bolstering communal safety nets, simplifying aid access, enhancing weather forecasting through collaboration with indigenous leaders, and implementing market protections for local crops. These measures aim to address both the physical and socio-cultural dimensions of L&D, promoting resilience among indigenous farming communities in an increasingly unpredictable climate.

Keywords: *climate change, indigenous peoples, loss and damage, agriculture*

1 Loss and Damage: An Overview

In recent years, discussions on Loss and Damage (L&D) have evolved from high-level discourse to practical implementation. The establishment of the Fund for Loss and Damage (FLD) in climate negotiations, along with ongoing talks on its operationalization, have clarified the purpose and focus of these discussions. Attention is increasingly directed toward how vulnerable groups, particularly Indigenous Peoples and Local Communities (IPLC), can access much-needed assistance. Additionally, there is a growing emphasis on non-economic losses, especially the impacts on biodiversity, heritage, traditions, and cultural values.

Figure 1 below from the United Nations Framework Convention on Climate Change (UNFCCC) provides a concise overview of Loss and Damage. While yet without a working definition, L&D is used to refer to those losses and damages that developing countries and local communities can no longer adapt to because of certain constraints, including lack of financial and technical assistance. These losses and damages take place through (and are often exacerbated by) slow-onset or extreme weather events, which then have both economic and non-economic ramifications.[1]

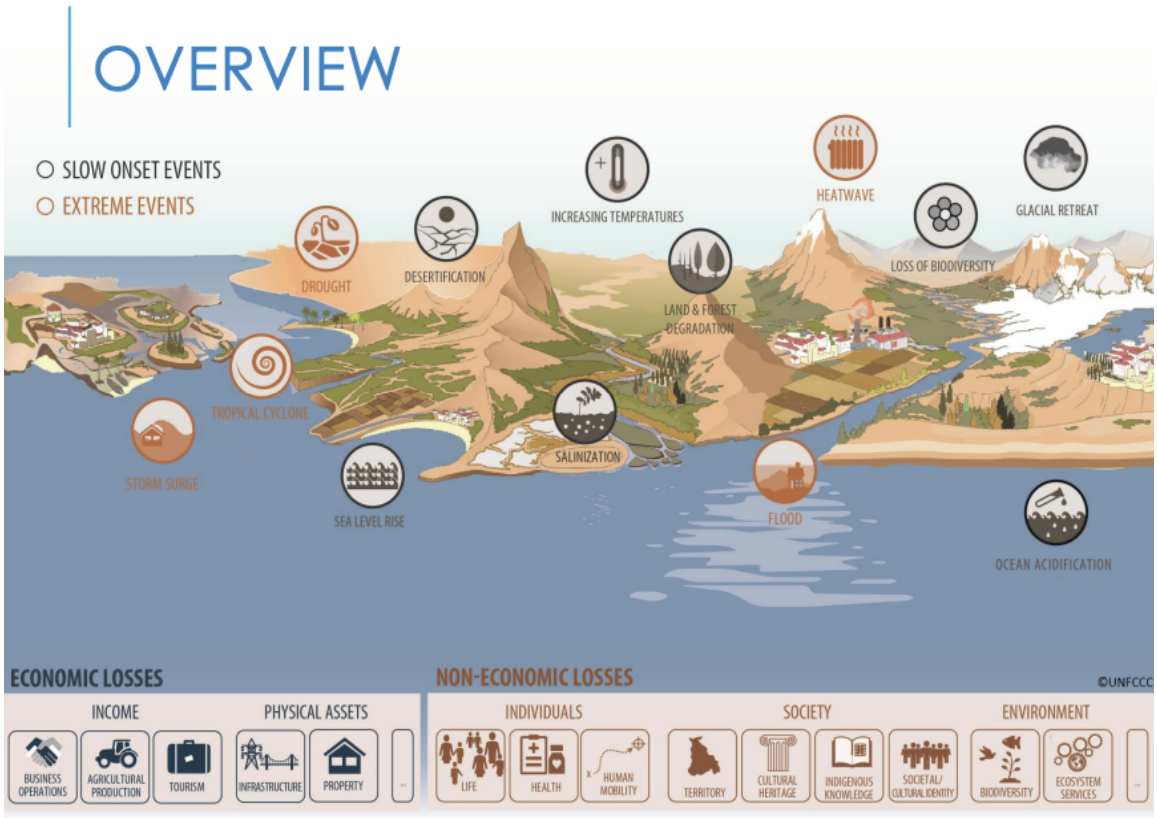

Figure 1. Overview of Loss and Damage

[1] United Nations Framework Convention on Climate Change. 2018. *Loss and Damage Online Guide*. https://unfccc.int/sites/default/files/resource/Online_guide_on_loss_and_damage-May_2018.pdf

This policy brief will discuss loss and damage from the purview of indigenous farmers in Benguet Province, lay down the various issues encountered by farmers in the face of climatic change, and provide recommendations on how best to provide assistance to indigenous farmers amidst an ever-warming world.

2 Benguet: Salad Bowl of the Philippines

Benguet Province is most known for its mountains, temperate climates, and huge production of upland vegetables. However, recent years have seen changes not just in climate but also in governmental priorities that have led to a shift in values and knowledge systems. In Atok, specifically, which is the focus of this policy brief, these changes are immediately apparent. A fourth class municipality in the province of Benguet, Atok has seen its agricultural productivity decline due to unpredictable weather and shifting seasons, directly impacting its main source of livelihood. Moreover, increased government focus on tourism and infrastructure development has diverted resources away from traditional farming support systems.

3 Climate change in the Highlands

While climate change will inadvertently affect everyone, its effects are disproportionate and unequal. Those in more rural, upland areas, as well as those in coastal locations, will experience its impacts more severely. In Benguet, a primarily agricultural province, these effects are particularly acute. The area faces frequent *puwek* (typhoons), *habagat* (monsoon rains), *andap* (frost), and *lanti/dalallo* (hailstorm).[2] Other issues likewise come into play: deforestation[3], increasing incidence of forest fires due to extreme heat and rainfall-induced landslides due to more frequent extreme rainfall events, deforestation, and other human activities exacerbate the situation. These hazards and their impacts, and the various corresponding adaptation efforts initiated by local farmers are illustrated more succinctly in the climate storyline below (Figure 2).

Indigenous communities in Benguet strive to adapt to these changes, but not all losses can be prevented. Frost and hailstorms, for instance, are especially damaging due to their unpredictable and intense nature, often resulting in significant crop losses, dwindling income, and ballooning debts. Farmers have long recognized frost as a hazard, but in recent years, they have observed shifts in its patterns, such as occurrences in March, when March is the start of the dry season.

[2] Launio, Cheryll C., Ruth S. Batani, Christita Galagal, Rebecca Folloso, and Kacy O. Labon. 2020. "Local Knowledge on Climate Hazards, Weather Forecasts and Adaptation Strategies: Case of Cool Highlands in Benguet, Philippines." *Philippine Agricultural Scientists* 103:67-79.

[3] Daipan, Bernard Peter, and Diomedes Racelis. 2023. "Mapping Forest Vulnerability to Fire and Landslides in the Cordillera Region, Philippines." *SciEnggJ* 16(2):265–74. DOI: 10.54645/2023162KDL-34.

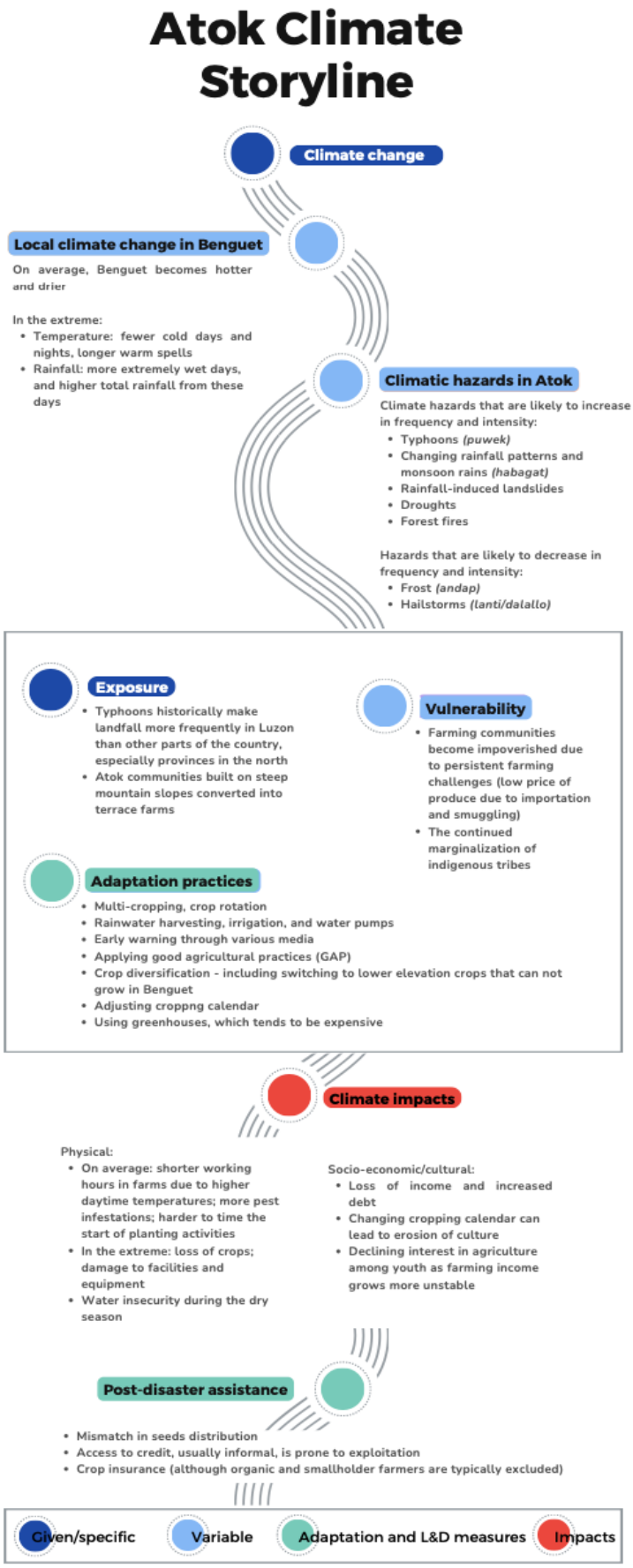

Figure 2. Climate Storyline of Atok, Benguet

Farmers have also observed broader shifts in Benguet's climate. Seasonal rains now start later or are erratic, making it challenging to anticipate planting times. The timing of the monsoon season has become unpredictable, with rains starting later than expected—or sometimes not arriving at all—adding to the uncertainty faced by local farmers.

Average temperatures have risen as well: while farmers used to work under the sun all day, they can now only work during early mornings or late afternoons due to the intense heat. In addition, typhoons have become more frequent and severe, occurring outside the traditional peak season, even during summer months, with unpredictable strength. These changes make it increasingly difficult to time planting cycles.

Beyond climate-specific hazards, farmers identify other, more pressing threats, including land tenure instability and poor market conditions (as well as importation and smuggling), that also affect their livelihoods.

Physical (economic) impacts of climate change

Local farmers observe other climate-related changes affecting their practices. During the dry season, water scarcity limits farming activities, forcing many to reduce cropping cycles from three to two per year. Warmer temperatures also contribute to pest proliferation, with pests like mosquitoes, previously uncommon in the highlands, now present.

During the wet season, long consecutive rainy days also damage crops.

However, local farmers note that there are also effects from climate change that are unprecedented, but not unwelcome – because of the warming, they can now plant crops such as *sayote*, beans, squash, eggplants, and papayas, which have traditionally grown in lower elevations where the weather is hotter, and are now viable in Benguet.

Socio-cultural (non-economic) costs

Truly, some of the most difficult impacts of climate change are not those that are most visible. One of the biggest threats to farming in Benguet is the increasingly lowering prices of highland vegetables due to importation and smuggling, which have led many local farmers to forcibly throw away their harvests as they can no longer compete in the market. Other farmers have also shifted to planting flowers or tourism activities instead.

While these are pronounced ways of adapting to climate change and creating alternatives, it also highlights the ways by which local communities are forced into changing their traditions to survive.

Government assistance

While the government does provide some assistance to farmers post-disaster, there is often a mismatch between what is provided and what is actually needed. For example, while local farmers in Benguet report that they have received seeds several times in the past, often post-disaster, these were neither the type of seeds that they commonly plant nor are they seeds that grow well in the area. Some local farmers have also reported claiming crop insurance from the Philippine Crop Insurance Corporation

(PCIC), although they note that the amount given is usually very small and unable to cover damages. Insurance is also especially hard to avail for organic farmers who work with smaller land areas. This then puts into question the usability of insurance – while they can play a key role in lessening the risks of communities, they are usually insufficient.[4] They are also often unequipped to adequately address non-economic losses and damages.[5]

Other concerns have also been raised by the farmers. Some farmers reported a mismatch between their needs and the aid provided – for instance, the variety of the seeds they receive from the government are often of a different variety than the ones they are used to, or otherwise unsuitable for the local climate. Other farmers noted the difficulties they face in complying with documentary requirements for post-disaster assistance, as often they need to be registered with the Registry System for Basic Sectors in Agriculture (RSBSA) to avail of government aid.

In general, farmers say, assistance is quite limited. Where the provisions are not enough for everyone, as is often the case, the Municipal Agriculture Office (MAO) tries to prioritize those whose crops or facilities were totally damaged. Farmers also reported different, and oftentimes changing, parameters for determining assistance as well as who gets to receive them, which include, but are not limited to, the area of the farmland, newly planted crops versus those ready to be harvested, high value crops, and percentage of damage. Timing is also an issue, as farmers who can submit reports quicker are then able to access aid first. These parameters can make the process of accessing assistance, an already bureaucratic process, even more confusing for farmers; it also leaves organic farmers at the bottom of the priority list for aid as they tend to work on smaller farm areas.

Risk sharing practices, therefore, have been much more viable alternatives for the local farmers of Benguet. While not formal systems, studies have shown that these are options that farmers utilize.[6] Mutual aid is one example, where stakeholders help each other during difficult times. In other cases, loans and credit are provided by "disposers" who sometimes act as financiers, giving farmers cash advances or production inputs on credit. These practices, while not structured, provide some risk management.

[4] Liu, Jing and Michael Faure. 2018. "Risk-sharing agreements to cover environmental damage: theory and practice." *International Environmental Agreements: Politics, Law and Economics* 18:255-273. https://doi.org/10.1007/s10784-018-9386-0

[5] Norlander, Linnéa, Melanie Pill, and Beatriz Martinez Romera. 2020. "Insurance schemes for loss and damage: fools' gold?" *Climate Policy* 20(6):704-714. https://doi.org/10.1080/14693062.2019.1671163

[6] Launio, Cheryll C., Mary-an J. Altaki, Matyline Camfili-Talastas, and Normalyn T. Longay. 2022. *Understanding the Market Channels of Conventional Highland Vegetables: The Role of Trading Posts and 'Disposers.'* Institute of Social Research and Development and Research and Extension Publications Office of Benguet State University. La Trinidad, Benguet.

These systems come with their own issues, but highlight the "community" aspect of local farming in the province. These informal systems, rooted in the communal ethos of indigenous societies, allow farmers to support each other through pooled resources and shared labor during times of crisis. While risk-sharing is not without its challenges, it highlights the resilience of community bonds in an increasingly individualistic farming landscape. This model of mutual aid not only provides economic relief but also reaffirms the communal values that have historically sustained indigenous farming practices, serving as a reminder of the cultural strengths that remain even amid shifting economic pressures.

Box 1: From the center to the margins

Typhoons have become increasingly unpredictable, both in timing and intensity. Farmers in Benguet note instances when PAGASA's forecast predicted a mild typhoon, yet they experienced severe winds. Given their highland location, farmers question the accuracy of forecasts for their area. While PAGASA typically issues up to Typhoon Signal No. 3 for areas like Atok, local farmers feel the impact is closer to Signal No. 5 due to the intensity of the winds.

Farmers in rural highland areas often feel that their experiences are dismissed or downplayed by those in central, urban locations. Despite reporting stronger-than-expected winds, frost, and more severe weather conditions, local observations from Benguet farmers are sometimes met with skepticism by those who rely solely on official forecasts. This disconnect leaves rural communities feeling marginalized, as the realities they face on the ground are frequently underestimated. For these farmers, the lack of recognition for their firsthand experiences adds another layer of difficulty, as it limits the responsiveness of aid and adaptation support that could be tailored to their unique conditions.

4 Broader local concerns

Indigenous perceptions of the climate crisis

The effects of climate change have not only impacted farming practices but also disrupted traditional knowledge systems. In the past, indigenous communities in Benguet relied on natural indicators, such as the presence of certain birds or plants, to predict the onset of rains or the start of the dry season – the *siyet* bird, for instance, signifies the start of the dry season; being able to view the stars meant the end of the rainy season; and observing the *liboo*'s direction (cloud/fog) foretells whether or not it will rain.[7] These ecological cues were integral to communal decision-making, enabling farmers to prepare together for the planting season.

However, with the changes in climate patterns and possibly biodiversity loss, this traditional knowledge is now rarely

[7]Launio, Cheryll C., Ruth S. Batani, Christita Galagal, Rebecca Folloso, and Kacy O. Labon. 2020. "Local Knowledge on Climate Hazards, Weather Forecasts and Adaptation Strategies: Case of Cool Highlands in Benguet, Philippines." *Philippine Agricultural Scientists* 103:67-79.

used. The shift away from communal practices to more individualistic approaches may also reflect a transformation in local values, where farmers are increasingly reliant on their own resources and judgment rather than collective wisdom.

This individualistic shift is particularly pronounced in highland vegetable farming. Unlike rice cultivation in lower-elevation indigenous communities where communal labor is essential, vegetable farming in highland areas like Atok is largely a solo endeavor. The introduction of highland vegetable farming, which dates back to American colonial influence in Baguio, was economically driven and primarily intended to supply foreign markets. As a result, this form of agriculture has fewer cultural ties to indigenous practices, focusing instead on market demands. While communal support is sometimes sought during harvest, when farmers may hire neighbors on a daily-wage basis, highland vegetable farming remains largely detached from the cooperative efforts seen in traditional indigenous agriculture.

This shift towards market-oriented, individualistic farming has had complex impacts on both livelihoods and cultural identity. Highland vegetables, such as lettuce, carrots, and cabbage, are not native to the Igorot diet; their cultivation is mainly an economic activity rather than a cultural tradition. Against the background of an increasingly harsher climate, local farmers are likewise increasingly confronted with market pressures, exacerbated by the influx of imported vegetables and the lack of regulation of market prices, where traders are allowed to dictate the prices of goods, which drive down prices. Unable to compete, some farmers have been forced to abandon their crops or pivot to alternative livelihoods, such as flower farming or tourism services. These adaptations may offer short-term economic relief, but they also signify a departure from traditional practices, underscoring the influence of external forces on indigenous communities.

The next generation of farmers

While farming remains a viable livelihood for the younger generations, many of them prefer more traditional employment, which is perceived by the youth as a more stable source of income, making pursuing farming as an industry of last resort, usually when they are unable to find employment elsewhere.

Climate crisis weaving into local challenges

The climate crisis has deepened the disruptions already faced by indigenous farmers in Benguet. As climate patterns grow more unpredictable, traditional ecological cues lose their reliability, further accelerating the shift from communal to individualistic farming. In highland vegetable farming, where market pressures have long dictated practices, this shift away from collective wisdom is even more pronounced.

Erratic weather intensifies existing vulnerabilities, forcing farmers to navigate not only environmental challenges but also volatile market conditions. Imported vegetables and fluctuating prices

compound these issues, leaving farmers with few options but to pivot to alternative livelihoods. These changes, driven by both climate and economic forces, mark a significant departure from traditional practices, further weakening the cultural fabric of indigenous agricultural communities in the region.

5 Ways forward and policy recommendations

To address the compounded challenges faced by indigenous farmers in Benguet, several policy directions should be considered. First, there is a need to strengthen community-based risk-sharing systems, which are foundational to indigenous resilience. Local and national governments can support these systems by providing resources or financial incentives to sustain communal safety nets, acknowledging the crucial role that community bonds play in adapting to climate-induced losses. Critically, discussions on financing in the international climate meetings need to be sped up so that the money pledged can be directed to communities that need it most.

Existing government programs could be expanded and tailored to better fit the needs of highland farmers, particularly for small-scale and organic growers. Additionally, simplifying eligibility requirements for marginalized farmers could improve accessibility of seeking aid, ensuring that support reaches those who are most vulnerable.

Integrating indigenous knowledge into forecasting and adaptation planning could bridge the current disconnect between rural observations and centralized weather forecasts. Collaborating with PAGASA and indigenous leaders to incorporate traditional ecological cues into modern meteorology would localize forecasts, making them more relevant and accurate for highland communities. Revitalizing these traditional knowledge systems is equally important.

In economic terms, implementing market protections for locally grown crops is essential to counter the adverse impacts of imported and smuggled vegetables on local prices. Policies such as targeted tariffs on imports or subsidies for native crops could stabilize the agricultural economy, supporting local farmers' incomes and reducing economic losses.

In combination, these policy directions recognize the multifaceted nature of loss and damage, addressing both economic and cultural dimensions. Focusing on community resilience, economic stability, and cultural preservation, these recommendations offer a path forward that respects indigenous traditions while preparing for an uncertain climate future, especially in the highlands.

6 Conclusion

Loss and damage, particularly for indigenous farmers and local communities, is not a distant term, but a lived reality. Benguet province, already climate vulnerable because of its geographical location, is facing exacerbated impacts of climate change,

that are not just economic in nature, but also increasingly non-economic as well.

It is important, in ensuring the preservation and longevity of indigenous knowledge, that these economic and non-economic dimensions are addressed, as these impacts encompass not only crop loss, reduced income, and market instability but also the erosion of traditional knowledge systems, cultural practices, and community cohesion.

As bearer of traditional knowledge and with a very deep connection to land, it is crucial that governments and decision makers recognize the importance of addressing climate change, prioritizing solutions that respond to the needs of those on the ground.

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