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Climate Tribune



■ **MAKING PROGRESS**

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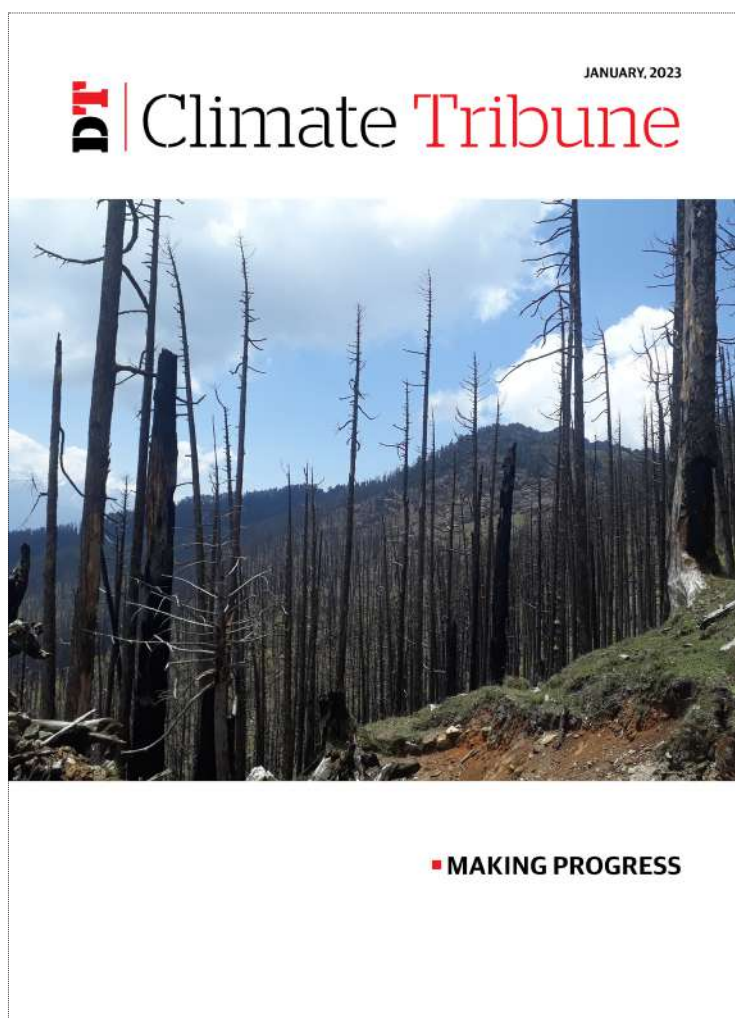
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■ MAKING PROGRESS

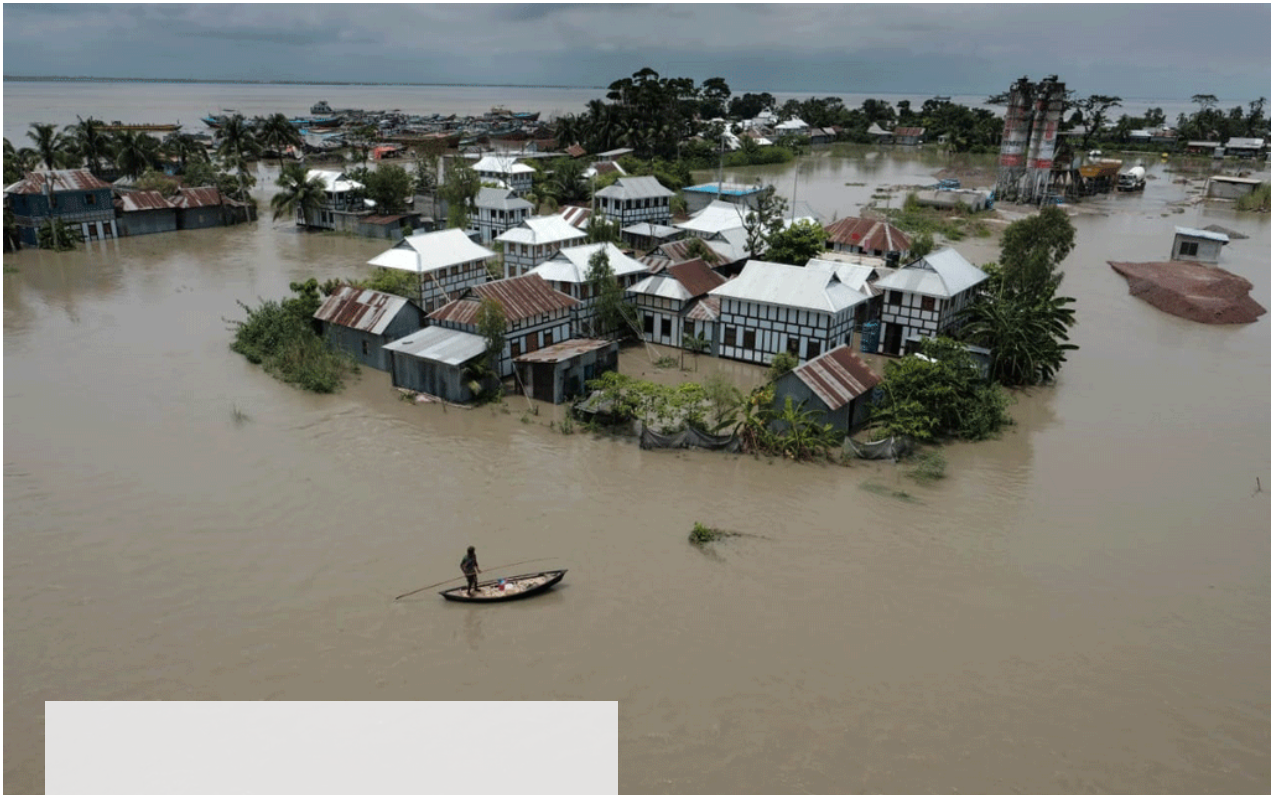


PHOTO: MAHMUD HOSSAIN OPU

Mapping of the losses and damages

Ordinary hazards turn into disasters in poor and less prepared nations

Afroz Shah

Historical and contemporary data show that ordinary hazards turn into disasters in poor and less prepared nations. It is true of earthquakes, floods, volcanic eruptions etc. Examples include the more than 80,000 deaths after the magnitude 7.6 earthquake in Muzaffarabad, Pakistan, and now the flood disaster in August-September 2022 in the same country that has caused more than 1,100 lives and billions in economic and non-economic losses. The ongoing and expected crisis related to climate change will follow the same path, which could metamorphose into large-scale devastations in unprepared nations and impoverished, developing world. It is particularly highlighted in recent research published in Nature Communications that has demonstrated the scale of destruction in the developed and developing countries expected from the rising sea level, coupled with local factors such as land subsidence. It shows that a staggering 23% of the world population lives in regions with significant flood risk with water inundation depth of greater than 0.15 meters in the event of a 1-in-100-year flood. Mapping the headcount relatively more prone to substantial flood risks suggests that the highest number of people (668 million) at risk live in East Asia and the Pacific regions. The second highest is estimated for South Asia, where 576 million

“ Often these countries are poor and face multiple problems at domestic and international scales ”

people are at risk, and two countries, India and China, share the maximum burden of people at risk.

Globally, 1.61 billion (89%) people affected by floods live in low, and middle-income countries, which suggests that the economic well-being of a nation is a prerequisite to preparing for disasters.

Often these countries are poor and face multiple problems at domestic and international scales, which is why the losses are reflected in the pre-and-post-disaster response. In contrast, high-income countries' populations exposed to flood risks primarily benefit from pre-and-post disaster response and management. For example, the Netherlands shares the world's highest relative exposure to flood risks, where 58.7% of the population lives in areas with inundation depths of >15 cm, as expected in a 1-in-100-year flood. However, the organized flood protection system in the country is prepared to handle the risk associated with a 1-in-10000-year flood. Such a robust flood monitoring system is not emplaced everywhere, particularly in ill-equipped, poor, and developing nations where flood risks are synonymous with poverty. Vietnam, for example, is one of the countries in the developing world that has invested in coastal flood protection systems to protect some 46% of the population that lives in risk zones. The extensive network of sea dikes covers 2,600 kilometres, which is more progressive development than many countries; however, it is not built to protect from floods that are more severe than a 1-in-30-years' timeline. It, therefore, could engender a more extensive section of the population in a major flood, which could cause severe problems related to both economic and non-economic loss and damage, as was recently witnessed in Pakistan. However, the major problem is the lack of detailed climate change-related flood hazard mapping that shows the expected losses and damages in developing and many developed countries makes it difficult to comprehensively plan what to do next. It is a major obstacle to cross to

implement Loss and Damage mapping in the world, with a major focus on the countries that face severe problems, such as regions in South and SE Asia.

What is more important is to understand that local factors play a critical role in dictating flood hazards, which include urbanization, topography (low-lying areas versus elevated regions), and populations near water bodies such as rivers, seas, and oceans. For example, the Kashmir basin, located in NW Himalaya, India, witnessed one of the most devastating floods in 2014 when more than 35% of the valley was under water. It mainly affected the low-lying area of the valley near the Jhelum River, the only river draining the Kashmir basin. The floods devastated the region's economy by destroying the agricultural land and residential and other infrastructure. The schools, offices, and connectivity within the state were limited for months because the road network was submerged and destroyed. My research team and I then did post-flood disaster mapping in the area and discovered that flood hazards are mainly related to the predisposed topographical setting of the region and will be extensively exaggerated in the future by climate-related factors such as glacial melting, cloud bursts etc. Therefore, the Kashmir region requires studying the local factors in combination with the factors related to the climate crisis that causes floods.

On a global scale, the flood disaster will multiply because many people live in low-lying areas near water bodies such as rivers and seas. Examples include the populations near the river Indus (Pakistan), Nile (Egypt, South Sudan), Brahmaputra (Bangladesh), Irrawaddy (Myanmar), Euphrates and Tigris (Iraq), and Mekong (Cambodia, Laos, Vietnam). The recent flood disaster in Pakistan was, to a large extent, expected because urbanization has overtaken a significant portion of the flood plain of the Indus River, and the situation is similar in other rivers. Therefore, the flood disaster was more manufactured than natural, and the problem will worsen if immediate steps are not taken to mitigate the impending crisis. The urbanization of water bodies and low-lying areas is a concern that must be addressed and made part of the climate-change-related flood hazards where losses and damages are included in the hazard mapping. Therefore, Loss and Damage mapping remains a crucial ingredient to model and protect the populations in the hazardous zones of the world, and in particular, the regions in South and SE Asia. ■

Original Articles:

Rentschler, J, Salhab, M, and Jafino, B A (2022). Flood exposure and poverty in 188 countries. *Nature communications*, 13(1), 1-11.

Shah, A A, Batmanathan, N M, Qadir, A, and Kumar, R (2022). Flood hazards in the Jhelum River are mainly controlled by the piggyback thrusting of the kashmir basin and less so by factors like climate change and urbanization. In *Climate Change* (pp. 143-159). Springer, Cham.

Enhancing the ability of Sri Lankan agricultural communities to cope with loss and damage from severe floods

Natural disasters have become more frequent, and Sri Lanka is frequently affected by floods, landslides, and droughts



PHOTO: FOCUS BANGLA

Sri Lanka, as a tropical island, is extremely vulnerable to natural disasters and climate change. In recent years, natural disasters have become more frequent, and Sri Lanka is frequently affected by floods, landslides, and droughts. Floods are the most common, widespread, destructive, and frequent natural hazards in Sri Lanka. Excessive rainfall, increasing populations, and accelerated development contribute to flooding, which includes river and reservoir-based floods, flash floods, and urban floods. Floods result in death, the destruction of agriculture, infrastructure damage, and a variety of other adverse effects on the environment and economy.

Last decade, flood relief and recovery cost the country a lot. In this period, the most devastating floods were reported in the South Western region in 2016 and 2017. The agriculture sector, which employs more than 30% of the population, is severely damaged. Floods disrupted two paddy cultivation cycles, affecting over two million households attached to the crop sub-sector. Additionally, the plantation sector suffered damage to smallholder tea and rubber plantations and tea factories, while the livestock sector suffered losses to bovine, swine, buffalo, goat, and poultry production.

Paddy seed distribution, silt removal of tanks, and rehabilitation of irrigation systems are among the immediate recovery measures implemented under the crop subsector. Other disaster risk management activities linked to these hazards are also widely applicable, especially in long-term situations when agriculture is at risk and affected by extreme floods. Broadly, the interventions include developing disaster management plans at the national and local levels, coordinating risk reduction, integrating disaster risk reduction into other development sectors, and building knowledge. Since Sri Lanka's floods are becoming more frequent and severe, it is imperative to develop an improved approach that addresses both disaster consequences and reduces vulnerability while strengthening community resilience.

In Sri Lanka, flood risk is conventionally addressed with a top-to-bottom strategy involving reactive emergency management, including lifesaving interventions, relief, and recovery efforts. Later on, disaster risk reduction focuses on community-based disaster risk management, including proactive pre-disaster measures. This initiative aims to reduce vulnerability, increase coping capacity, and accelerate recovery for vulnerable parties by incorporating the needs and capacities of the local community. In the face of repeated shocks, however, highly vulnerable populations require humanitarian assistance. As disasters are transboundary by nature, communities are not able to prevent them entirely, and disaster prevention, mitigation, and preparedness are not under their direct control. Therefore, flood risk requires a blended risk-sensitive community-centered development approach.

“Taking this mixed approach could produce resilient communities in Sri Lanka that can overcome flood-related adversity”

Taking this mixed approach could produce resilient communities in Sri Lanka that can overcome flood-related adversity. Increasingly, resilience is recognized as key to reducing long recovery periods after floods. A resilient community must maintain essential functions during and/or after a shock by applying or reorganizing its resources. Therefore, the process of building flood-resilient communities needs to be community-centered and system-based. The focus of such an approach should be on strengthening the major capital items or subsystems of a community, such as human, social, environmental, economic, and physical capital. To improve human capital, individuals' risk-coping capacity must be enhanced through information about potential hazards, preparation for emergencies, and appropriate adaptation methods and strategies. A stronger focus should be placed on improving individuals' sensitivity to risk information, their knowledge of risk identification and sound environmental management, and their ability to deal with hazards. Agri-technology adoption programs are needed to promote contingency crop planning, flood-resilient cropping, crop diversity, and climate-smart agriculture. The top-down programs and policies must support bottom-up initiatives in order to replicate effective management practices, promote autonomous innovation, and utilize appropriate external technology to address new or magnified challenges. Through appropriate policies, and legal, and organizational support, social capital can be enhanced by promoting social networking, civic engagement, and social safety nets to ensure communities are prepared to deal with disasters and bounce back by developing adequate risk-coping strategies and positive interpersonal relationships.



PHOTO: DHAKA TRIBUNE

“Communities must have adequate access to financial and physical resources, as well as risk-transfer mechanisms, in order to reduce economic risks”

The long-term use of environmental capital can be assured by adhering to conservation principles and implementing risk-sensitive environmental management strategies to maintain environmental equilibrium.

Communities must have adequate access to financial and physical resources, as well as risk-transfer mechanisms, in order to reduce economic risks. This context calls for

the role of financial institutions, financial allocations for emergencies, and risk-aversion methods such as insurance. In the aftermath of a flood, markets need to be regulated, and established value chains must be maintained. To compensate for crop damage and loss of livelihood, programs must also promote additional income generation from off-farm and non-farm activities. In order to improve the physical capital of vulnerable regions, risk-sensitive regional or rural planning is needed that adheres to standards and land-use practices to ensure that basic amenities and supporting infrastructure are available before, during, and after floods. It is important to consider the special needs of disabled people, women, and children in the community when improving physical capital. In addition to the aforementioned measures, the governance system should prepare comprehensive emergency response plans that are in accordance with humanitarian standards and ensure the rights of diverse groups in each division.

To summarize, Sri Lanka can create flood-resistant agricultural communities and minimize the potential loss and damage caused by extreme floods by using a community-centered, system-based approach that focuses on improving and adjusting major community capitals effectively. This approach has implications for other similar contexts in the region and worldwide. ■

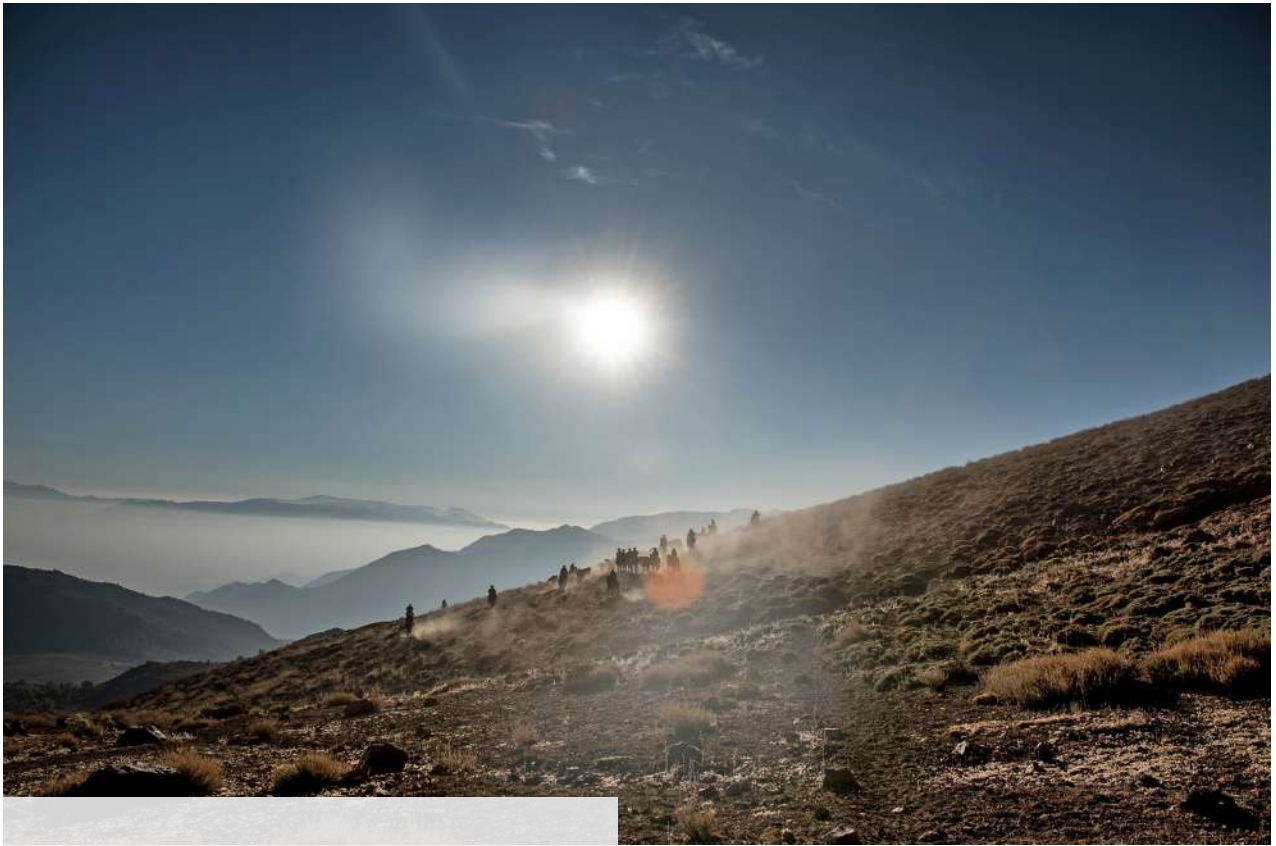


PHOTO: COURTESY

The invisible role of local communities in adapting to climate change

Lessons learned from working with muleteer communities in the Andes in Chile

Gonzalo Pérez E

The activity carried out by muleteers and livestock farmers in the foothills of the O'Higgins Region in Chile has decreased substantially with respect to previous years; a behavior that could be explained by the lower productivity due to the historical overgrazing of the area and the lower profitability obtained with this type of practices that respond more to lifestyles and the maintenance of culture.

One of the main threats is due to the inconsistency in national, regional, and local public policies to contribute to improving knowledge on adaptation and to support the knowledge of these local muleteer communities to be an integral part of the decision-making process of public sector institutions, a situation that in practice does not occur, leaving invisible centuries of accumulation of knowledge on the territory, adaptive management and other key elements for resilience.

A process of adaptation to climate change has not been generated for the muleteer and livestock activity of the foothills in the O'Higgins region, which threatens not only the livestock activity as a livelihood for entire families in the defined territory but also threatens the disappearance of a traditional cultural

activity that is part of the region's heritage and that constitutes in part as an opportunity for development.

The historical social construction of the muleteer's activity (almost five centuries) is threatened by the impacts of climate change. In central Chile, the foothills are highly vulnerable to climate change. The mega-drought that has affected central Chile is a major problem. Access to feed for equine and bovine livestock is becoming increasingly difficult for muleteers due to the water crisis caused by climate change.

Given the lower availability of water resources, there is less food available for livestock in the mountain range, which generates overgrazing, threatening the existence of the mountain ecosystem and limiting its resilience. This creates a negative feedback loop in which, on the one hand, it affects the possibility of development and livelihoods of the muleteers and cattle ranchers and, on the other hand, severely affects the mountain ecosystems.

For this challenge in the territory, associative work has been generated with various actors: local communities of muleteers; municipalities; regional public institutions; companies; landowners; NGOs, and academia, to build a framework that allows us to identify options for adaptation to climate change, incorporating the knowledge of local communities for this purpose.

The initiative, which is currently underway, seeks to generate technology transfer mechanisms through different actions for the final achievement of two desired situations:

1.- Persistence of the mountain livestock activity carried out by the muleteers and ranchers of the mountain range buttress of the O'Higgins Region, which may be addressed through integrated mechanisms that include key technology transfer to the beneficiaries who carry out and maintain the activity and who have been affected by a series of external drivers, among them the main one that can be identified as climate change.

2.- The consensual implementation of incremental transformations will make it possible to build and increase the resilience of the mountain livestock activity, through technology transfer mechanisms that address, on the one hand, the livestock activity and, on the other hand, the resilience of the mountain ecosystem and the importance of the biodiversity present in this system.

The implementation of the initiative will make it possible to maintain and strengthen a territorial asset that contributes to the identity and development of the region, in addition to generating spaces for increasing well-being on a local scale and revitalizing an important cultural element not only for the Cordillera territory but also for the region and the country, as well as generating learning for other similar and related activities.

One of the essential aspects of the design and implementation of the project has been the construction of governance spaces relevant to the scale of the project. This has meant the incorporation of spaces for dialogue to advance in the

“ Access to feed for equine and bovine livestock is becoming increasingly difficult for muleteers due to the water crisis caused by climate change ”

construction of a common agenda among the different project partners.

Involvement mechanisms aim to achieve participation that will strengthen and deepen knowledge and adaptive mechanisms for development at the local level.

Involvement has been built through the dialogue and worktables among stakeholders, in addition to the information collected, an evaluation of the agricultural suitability of soils, and the construction of mechanisms for community use of unused fiscal soils.

Among the initial actions considered and carried out was the construction of a framework and information transfer for the valorization of the ecosystem services of the pre-mountain range at the local and regional scale that allows the co-creation of a new cycle of land use, based on the organization of the actors present in this space, which in the logic of co-creation allows a definition of the cycle of use of the mountain ecosystem, training on the monitoring of the resilience of the ecological system, through technical transfer.



PHOTO: COURTESY

Together with the partners, this cycle has been sought to present a tourist use, defining desirable activities and the construction of a cycle of use of the territory based on governance among local actors, building a new cycle of grazing, and the construction of special interest tourism products.

Technology transfer mechanisms have been made effective through a program to improve competitiveness, construction of territorial business models, organization among stakeholders, and their relationship with local and regional institutions. This has been done through technical transfer activities to beneficiaries, training, co-construction of a business plan and territorial business model, the design of specific actions for groups of beneficiaries, which will allow the achievement of objectives, closure, systematization, and the definition of future challenges for the livestock and cattle raising activity.

However, there are important challenges that need to be addressed: initiatives carried out with local communities hardly become public policies or have the capacity to influence public policies, maintaining the vulnerability of social systems and limiting the opportunity to improve our knowledge on adaptation.

When will we stop invisibilizing the knowledge of local communities for the construction of better adaptation measures? ■

“ Technology transfer mechanisms have been made effective through a program to improve competitiveness, construction of territorial business models, organization among stakeholders, and their relationship with local and regional institutions ”



PHOTO: DHAKA TRIBUNE

From framing to financing

The journey from conceptualizing to fund allocation

Kavita Sachwani

COP after COP, the global climate action community or the ‘Conference of the Parties’ as it is officially called, has made endless efforts to define, measure and attribute Loss and Damage. From Agreement to Protocol, from Mechanism and Network to Conference, from Declaration to Dialogue, we have been only discussing and asserting the need for climate action. Even the science of the impacts of climate change and its disproportionate impacts on developing countries are indisputable. It’s time we moved from dialogues and margins of climate negotiations to rebooting failed pledges and promises! Because our climate-changed world is struggling to stay afloat. In COP27, Loss And Damage went mainstream with the launch of the Loss and Damage Fund, ushering in a new era in climate justice. While a lot of work lies ahead to operationalize this, the consensus on launching it has been a big breakthrough and one of the biggest outcomes of COP27.

Scale and Cost of Loss and Damage

According to WMO, 2021, there is an eightfold increase in economic losses due to weather, climate and water extremes between 1970s and 2019. UNDRR estimated losses from natural

hazards in 2020 alone to the order of USD 210 bn. At 1.5 degrees C, GDP loss for vulnerable countries is estimated at 13.1% by 2050 and 33.1% by 2100 (Andrijevic & Ware, 2021). A 2018 study estimated that total damages in developing countries could reach USD 290-580 bn by 2030 and USD 1.1-1.7 trillion by 2050. This is way above the USD 100 billion per year that was committed under the Paris Agreement specific to adaptation and mitigation, and does not include financing for Loss and Damage. International funding for disaster risk reduction compares poorly against the economic losses experienced by countries.

Framing 'Loss and Damage'

The appropriate response to loss and damage has been disputed since the UNFCCC's adoption. In the 1990s the impact of climate change was more a hypothesis, but now that it has become a reality affecting billions of people globally, L&D is framed by some countries as the residual risk when mitigation is insufficient and when the full potential of adaptation is not met. It cannot be conflated with Adaptation, finance for which is chronically insufficient and delayed and drives up the cost of Loss and Damage even further. Impacts of climate change are and will continue to be unequally distributed across the globe. For example, Pakistan was recently ravaged by floods that submerged one third of the country, but is responsible for a mere 1% of the global CO2 emissions. Similarly, many countries in the Global South which are responsible for a negligible amount of global emissions - about a similar 1%, are stuck in a toxic interplay between a climate catastrophe (increasing hunger, structural inequality) that they are not responsible for. Therefore, the Global North needs to pay for the Loss and Damage happening in the Global South. This is in line with the Polluter Pays principle introduced by the OECD Guiding Principles, under which the polluter is held responsible for the environmental damage and pollution.

L&D encompasses both (i) rapid-onset impacts - like floods, cyclones, heatwaves, as well as (ii) slow onset impacts like sea-level rise, desertification, glacial retreat, ocean acidification and salinization. Economic losses are observed in agriculture, forestry, fishery, energy and tourism. Non-economic losses in the form of loss of livelihoods, forced migration and permanent relocation, loss of culture and heritage, biodiversity, are graver and more pronounced for the poor in developing countries, and sadly, not even appropriately quantifiable.

Instead of labelling L&D to liability and compensation in the context of UNFCCC, it is important to shift the paradigm towards solidarity, where the scientific community can best prove the case by giving uncompromising evidence of attribution of human induced climate change caused largely due to emissions by the Global North, resulting in losses beyond adaptation efforts largely in the Global South. Financing Commitments for L&D so far - A Drop in the Ocean?

Even though averting, minimizing and addressing Loss

and Damage is anchored in the Paris Agreement, financial commitments by the Global North to the Global South are grossly falling short to the scale and speed at which losses and damages are happening. Listed below are some funds within and outside the UNFCCC which partially finance loss and damage. With the consensus to establish a Loss and Damage Fund, a clear and universal definition of loss and damage is needed to say with certainty whether and how much of the financing from each of these entities can support addressing loss and damage.

“ The Global North needs to pay for the Loss and Damage happening in the Global South ”

Under UNFCCC

1. Green Climate Fund (GCF)
A multilateral source within the UNFCCC provides funding mostly for averting and minimizing which are mitigation and adaptation respectively, to the extent it is compatible with its investment and results framework, existing windows and structures and responsive to the workstreams of the Warsaw International Mechanism.
2. Least Developed Countries Fund (LDCF) - provides funding for adaptation.
3. Special Climate Change Fund (SCCF) - provides funding for adaptation.
4. Adaptation Fund (AF) provides funding for adaptation.
5. Santiago Network on Loss and Damage (SNLD) whose functions were agreed upon at COP26 in Glasgow, is gearing to provide only technical assistance on Loss and Damage.

Outside of UNFCCC

The main sources of multilateral financing to address loss and damage are:

1. Global Facility for Disaster Reduction and Recovery (GFDRR) - reported on 3 areas that show overlap with addressing loss and damage: (i) Deepening Financial Protection, Building Community Resilience and Enabling Resilient Recovery
2. The Global Risk Financing Facility (GRiF) provides finance through insurance mechanisms.
3. Multilateral Development Banks / Official Development Assistance - an important source of finance to address Loss and Damage. Using OECD data on disaster related ODA as a proxy, \$133 billion or 11% of international aid was disaster-related from 2010-2019.

At COP26, as a result of a sustained campaign from AOSIS, LDCs, CAN, ICCCAD and others, a few green shoots emerged. These are also clearly inadequate and need to be fast tracked and followed through for implementation. More specifically:

1. **Scotland and Wallonia:** Partnering with the Climate Justice Resilience Fund (CJRF), the Govt of Scotland committed to support some of the world's most vulnerable communities to recover from climate induced L&D. by pledging 2 million pounds (USD 2.5 million) followed by 1 million Euros (USD 1 million) from Govt of Wallonia..
2. **Philanthropic Organisations**, including Children's Investment Fund Foundation, European Climate Foundation, Global Green Grants Fund, Hewlett Foundation and Open Society Foundation, pledged USD 3 million, Very small in comparison to the scale of the challenge and vis-à-vis the commitment, but an important first step in unlocking further finance and ambition.
3. **Climate Vulnerable Forum and V20** convened a series of Regional Dialogues which were used to formulate the Dhaka-Glasgow-Declaration, that outlined the key asks of the CVP Member countries from COP26 in the form of creation of the CVP and V20 Joint Multi-Donor Fund with an initial funding from the CVP countries themselves and then further contributions from international foundations.
4. **G77 and China** proposed a Loss and Damage Finance Facility (LDFF) to provide new financial support under Article 9 of the Paris Agreement, distinct from and in addition to adaptation and mitigation finance, for developing countries to address Loss and Damage.

IMF established the Resilience and Sustainability Trust Fund in April 2022, to help countries build resilience to external shocks and ensure sustainable growth focusing on longer term structural challenges including climate change. About three quarters of the IMF's membership will be eligible for longer-term affordable financing from the RST, including all low-income countries, all developing and vulnerable small states, and lower middle-income countries. The extent to which it will

support the climate risk and loss and damage agenda remains to be seen.

Government of Denmark committed 13.4 Million Euros as "Loss and Damage" compensation for most vulnerable regions of the world during the UNGA in Sep 2022,. Of this 4.7 Million Euros will be allocated to subsidise insurance in poorer countries, 4.4 Million Euros to strategic partnerships with civil society which work with Loss and Damage with a special focus on the Sahel region which spans North Africa's Sahara desert and 3.4 Million Euros for strategic efforts to support current climate change negotiations in the run-up to COP27. And 0.94 million euros to civil society working in developing nations on climate resilience.

“ The objective of the Partnership is to enable more timely and reliable disaster response through the use of climate and disaster risk finance and insurance solutions, reducing humanitarian impacts, helping poor and vulnerable people recover more quickly and strengthening local resilience over time ”

InsuResilience Global Partnership was launched in Nov 2017 in COP23 for Climate and Disaster Risk Finance and Insurance Solutions with a vision to strengthen the resilience of developing countries through creating a V20-G20 collaboration to protect the lives and livelihoods of poor and vulnerable people against the impacts of disasters. The Vision was announced at the UNGA Climate Action Summit in September 2019. The objective of the Partnership is to enable more timely and reliable disaster response through the use of climate and disaster risk finance and insurance solutions, reducing humanitarian impacts, helping poor and vulnerable people recover more quickly and strengthening local resilience over time. The Partnership currently has 100 plus members across sectors across 100 + countries.

4. Mechanisms and Sources for Financing L&D

(a) Loss and Damage Fund

The Financing mechanisms for addressing loss and damage need to be flexible and fit for purpose to provide context specific support at scale and speed. The Loss and Damage Fund announced at COP27 can provide new financial support to developing countries to address Loss and Damage. Key elements:

- 1. Governing Principles:** LDF can be set up in line with a climate justice-oriented approach - (i) International cooperation and solidarity, historical responsibility and the polluter pays principle; (ii) New and Additional (iii) Needs based, adequate, predictable and precautionary (iv) Locally driven enveloping gender responsiveness and equitable representation (v) Public and grant based (vi) Balanced and comprehensive.
- 2. Functions:** LDF can be established as an operating entity acting as the third pillar of the Warsaw International Mechanism of UNFCCC accountable to the Conference of Parties to the Paris Agreement. As both, a coordination and financing mechanism, it should be the primary vehicle to coordinate, mobilise and channel new, additional, adequate and predictable financial resources to address L&D.
- 3. Governance:** The LDF should be governed by a decision making body with equitable representation composed with a majority of members from developing country Parties.
- 4. Financial Instruments:** The LDF should primarily provide full cost grant funding - through two distinct windows to be developed in response to differing needs and time frames for funding: (i) Urgent response to rapid onset events such as storms and floods (ii) Slow onset events and L&D planning and policy frameworks and transformative programming (such as for permanent relocation and addressing loss of culture, language etc.). It should provide simplified access to funding, allowing for both international access and direct access (prioritized) through regional, national and sub national entities as needed.
- 5. Timeframe:** The LDF can be launched through the Glasgow Dialogue and operationalized in three years : (i) Year 1: establishment of the LDF and process to identify L&D needs, (ii) Year 2: Reporting and confirming progress on governing arrangements and delivery structure of LDF and (iii) Year 3: Operationalization of LDF with finance starting to flow to developing countries

(b) Insurance and Auto Generated Mechanisms as Sources of Finance for L&D

In addition to the LDF, the following additional sources of finance can be accessed for addressing L&D (particularly from slow onset events) in developing countries. These sources are mechanisms whose revenues can be public, private or a mix of both and are based on the principles of attribution, rehabilitation and / or compensation. A three component coding template has been developed and applied to the above sources

rated against a three point scale (low/ medium/high), to assess (1) appropriateness of the finance source (for rapid onset / slow onset events), (2) degree of sustainability of the finance source (i.e. whether revenues are likely to increase or decrease over time), and (3) extent to which the finance source meets eight other related financing criteria viz. (i) fairness, (ii) feasibility, (iii) predictability, (iv) adequacy, (v) transparency, (vi) additionality, (vii) direct access, and (viii) vulnerability focus.

“ These sources are mechanisms whose revenues can be public, private or a mix of both and are based on the principles of attribution, rehabilitation and / or compensation ”

- 1. Insurance and Risk pooling** - Generally considered an inadequate response to address L&D due to unaffordable premiums, and the inability to reach the uninsured, or informal sectors, protect human rights and development gains. But it does have reasonable potential to address both climate risk management and become a source of environmental compensation for developing countries. Insurance schemes can be parametric / index based and the traditional indemnity based.
- 2. Contingency finance** - refers to the additional amount or percentage added to a financial flow in order to ensure that it is either spent or remains as a buffer. While it can help improve risk planning and response in developing countries, this approach to financing L&D places an added and perpetual burden on the poorest and most vulnerable countries, given the temporal nature of slow onset events.
- 3. Bonds** - Climate-themed bonds are debt securities that finance mitigation and adaptation projects - payouts are generally provided by the private sector and purchasers are typically institutional investors. Catastrophe bonds are 'high-yield debt instruments that transfer specified risks from the bond issuer to an investor to provide the bond issuer funds if a catastrophe strikes.
- 4. Debt Cancellation and Debt Relief** - Comprehensive and complete debt cancellation, especially for most vulnerable countries is another way to increase their fiscal space for climate actions and especially for addressing L&D, including strengthening social support structures.

5. Levies and Taxes and Reduction in Fossil Fuel Subsidies - are viable auto-generated mechanisms for both gathering and effectively using funds to support L&D response. These can include levies on international airline travel and fossil fuels such as bunker oil, taxes on financial transactions. These can be highly sustainable over time and can generate about 10 billion USD p.a. Imposing carbon pricing on major fossil fuel companies, based on the carbon content of fossil fuels is another significant source and can be institutionalized in different forms including levies and taxes on fossil fuel extraction, international aviation and bunker fuel.

Auto-generated mechanisms like Levies and taxes in the form of a national or international financial transaction tax, an international airline passenger levy, a solidarity levy, a bunker fuel levy, or a fossil fuel/carbon levy appear to be the most appropriate sources for addressing L&D particularly from slow onset events in developing countries. However, these sources could potentially likely face political obstacles and may not completely provide a steady and predictable source of funds (predictability); and would not be entirely sufficient to cover the cost of loss and damage from slow onset events (adequacy). But if these funds are pooled under the proposed Loss and Damage Fund, these issues can be adequately addressed.

Beyond COP27 - Rebooting Failed Promises for L&D

It was good news that L&D was on the top of the Agenda at COP27. As science, policy and practice come together to address both economic and non-economic loss and damage, it is important to operationalize the Loss and Damage Fund announced at COP27 with a sense of urgency. Governments need to adopt multi-stakeholder approaches involving the private sector, civil society and academia to develop pathways for financing to address loss and damage and concrete solutions like they have done in the past, that will make a meaningful difference to vulnerable communities and countries.

In specific terms, the following four items constitute dialogue to action from framing to financing:

- 1. Unity in the Global South for Solidarity from the Global North** - Global South countries must continue to maintain unity by supporting country blocs and concrete messaging to produce tangible results in mobilizing finance for LDCs to address Loss and Damage. The Global North needs to engage the Global South and in good faith and solidarity mobilize necessary funds to address Loss and Damage.
- 2. Set up a research Mechanism to define Loss and Damage Finance** by identifying streams that may already include some resources for addressing loss and damage within multilateral, bilateral, domestic, philanthropy and private channels. Further, distinction between climate adaptation activities and measures to address L&D are needed so that these two are not conflated and there is focus on marginalized communities and vulnerable countries,

with rapid onset events & slow onset impacts both being addressed adequately.

- 3. Establish and Operationalize the Loss and Damage Fund** to reboot failed promises to demonstrate practical progress and tangible outcome which is both context specific and long lasting.
- 4. Set up a process towards shaping, and institutionalizing parametric Insurance and Auto generated mechanisms** as additional sources of finance adapting the source of finance best suited for rapid and slow onset events.

“ Whether our journey through our climate changed world will be a pilgrimage towards illumination or a dive further into an apocalypse will be determined by how quickly we are able to convert intent into action ”

Our planet is climate changed already! And we are ‘running out of road’ for doing very little in proportion to the scale, intensity and unprecedented speed of the problem. Whether our journey through our climate changed world will be a pilgrimage towards illumination or a dive further into an apocalypse will be determined by how quickly we are able to convert intent into action post the COP27 euphoria during which Loss and Damage went mainstream. The generations to come demand that they must not remain below the surface. We need to ensure that nations don’t retreat into their own narrow and short-sighted interests, leading us to a global tragedy of commons. “Either this will lead to the intensification of walls, violence, and censorship as frontline communities become sacrifice zones for corporate greed and recklessness, or we will witness global solidarity where we assert our common humanity by redistributing resources and mitigating historical wrongs.” - Ammar Alo Jan, Jacbin.

It is time we all choose a side. The side that reclaims the future for the generations ahead. ■

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PHOTO: DHAKA TRIBUNE

ICJ advisory opinion on state responsibilities for climate change action

M Hafijul Islam Khan (Hafij Khan) and Moumita Das Gupta

In a speech to the UN General Assembly on September 26, 2021, the Prime Minister of Vanuatu, Bob Loughman, expressed his firm aspiration to expand advocacy and diplomacy with a view to seeking for Advisory Opinion from the International Court of Justice (ICJ) on the State obligations for climate change ahead of the 26th climate summit COP 26. Accordingly, in coalition and consultation with other fellow countries, including Bangladesh, on November 30, 2022,

the Republic of Vanuatu released a draft resolution that will lead to a vote at the 77th session of the UN General Assembly, likely to be held in early 2023 on a date to be set yet.

To pass this resolution, a simple majority of the member countries of the UN General Assembly will be required. If this resolution is passed, it shall ask the International Court of Justice (ICJ) to clarify the State's obligations to protect the climate system as well as the other parts of the environment. Different parts of the resolution have made every effort to cover questions relating to intra-State, inter-State, and inter-generational legal obligations in this respect.

This draft resolution refers to Article 96 of the Charter of the United Nations and Article 65 of the Statute of the ICJ. Article 96 of the UN Charter provides the UN General Assembly with the authority to request the ICJ to deliver an advisory opinion on any question of legal issues. Article 65(1) of the Statute of the ICJ has supported Article 96 of the UN Charter.

Article 65(2) of the Statute of the ICJ states that the questions for providing advisory opinion shall be laid before the Court in writing with the accurate questions upon which the opinion should be delivered. These questions should be accompanied by all relevant documents likely to be helpful in providing the opinion. Articles 66, 67, and 68 of the Statute of the ICJ have described the detailed procedure for procuring the advisory opinion.

The draft resolution, as released, is mainly concerned with the questions relating to the adverse impacts of climate change that are causing and going to cause severe violations of human rights anywhere in the world. However, this resolution does not impose any liabilities on any of the States. Also, no legal rights shall be incurred out of this resolution.

This draft resolution has recognized the urgency for the well-being of present and future generations of humankind. It has recalled supporting UN resolutions and supporting resolutions of the Human Rights Council. By emphasizing the UN Charter and other Human Rights Charters and international instruments on climate change, this draft resolution has also recalled the United Nations Framework Convention on Climate Change, 1992 (UNFCCC), the Kyoto Protocol, 1997, and the Paris Agreement, 2015.

Subsequently, this draft resolution has acknowledged the actions of all countries in responding to climate change and for reflecting equity added with the principle of common but differentiated responsibilities in accordance with respective capabilities and different national circumstances.

By noting the attributions and apprehensions about the adversities of climate change, this draft resolution has also noted deep regret about not being able to mobilize enough finances from the developed countries and the pledges that are not met yet. It has also emphasized the urgency of increasing necessary support and action for financing, technology transfer, and capacity building for implementing collaborative approaches and enhancing adaptive capacity.

All these statements of the preambular paragraphs of the draft resolution are followed by the operative paragraphs having two main sub-components. Firstly, the operative part referred to the international laws that are to be consulted by the ICJ for providing the advisory opinion. Secondly, the questions to be answered have reflected concerns for human rights and intergenerational equity with inter-State dimensions and aspirations.

These questions asked for opinions about State Obligations under international law to ensure the environmental rights of the present and future generations. Also, these questions

asked for opinions about legal consequences for the acts and omissions of the States that have harmed the climate system significantly with respect to climate-vulnerable countries of the world and affecting both present and future generations.

Bangladesh is one of the drafters of this resolution. After voting, if this resolution gets passed by the UN General Assembly, it will result in an advisory opinion from the ICJ, which can be a base for claiming climate rights for vulnerable countries, communities, and ecosystems. Also, it can clarify the legal duties of the States. This prospective advisory opinion

“ The draft resolution, as released, is mainly concerned with the questions relating to the adverse impacts of climate change that are causing and going to cause severe violations of human rights anywhere in the world ”

has no binding force under international law to impose legal obligations. Still, it has great consequences in respect of moral obligations.

In customary international law, an advisory opinion of the ICJ has every potential to develop, determine and clarify the legal norms. It influences the belief and behavior of a State and provides conclusive evidence regarding rules of customary international law as existing. It serves State practice with a formal appraisal.

As it is not a result of any court case, an advisory opinion cannot make any state perform any legal duties and responsibilities. Still, by creating moral obligations, it can surely advance the customary international law applicable to climate change to support vulnerable countries with conclusive evidence for claiming their legal rights for survival. ■



PHOTO: DHAKA TRIBUNE

Addressing Loss and Damage and the right to a healthy environment

The importance of monitoring and evaluation

Mohamed Shumais

The United Nations General Assembly passed a resolution recognizing the right to a clean, healthy, and sustainable environment as a human right on 28 July 2022. However, human-induced environmental degradation and climate change are increasingly causing irreversible loss and damage to both human and natural systems. It is crucial to monitor and evaluate the impacts of these threats on public health, livelihoods, and other aspects of life in order to

identify the most effective interventions to support affected communities and reduce their vulnerability.

The lack of baseline data limits our understanding of loss and damage. For example, the tsunami that hit the Maldives in 2003 had a devastating impact. Still, assessments of the loss were likely underestimated due to the lack of baseline data about the country's socio-economic and environmental conditions. Developing methodologies that can capture costs and cumulative impacts can help to minimize inaccurate perceptions of the extent of these impacts, particularly for

slow onset events and non-economic losses.

In the Maldives, the government provides relief funds to residents for damages caused by disasters such as flooding, but these do not accurately reflect the true value of the losses and damages. The current system only assesses reported damages at the time of the event rather than reassessing over time to determine if the economic and non-economic losses have increased as a result of the disaster.

Community participation can be significant for successful initiatives to collect data. In the 1980s, fishing boats in the Maldives provided catch data to island offices, which was then broadcasted on national radio, allowing people across the country to stay informed. As a way of reviving participatory data collection, a web-enabled database that can be accessed from smartphones was introduced in 2015 to compile and process catch and effort data.

Access to more technologies can enhance the contribution to understanding the nature of environmental changes and identify ways to respond to them. The principle of climate justice advocates for the fair sharing of technology, particularly in developing countries where access may be limited due to patents or high costs. The use of drones is becoming a cost-effective way to collect ground surface data from a variety of sensors, including cameras, videos, infrared radiation sensors, and weather sensors. A study in Wangiwangi in Indonesia revealed that drones could be used as an alternative to providing images with a very high spatial resolution to map habitats and the abundance of fish species. In the Maldives, a project on “Drones for Resilience” was completed in 2022 with the objective of providing data for disaster risk reduction and serving as a tool for evidence-based local development planning, and strengthening long-term resilience in communities.

Information on how communities have responded to and recovered from past incidents can provide valuable insights into the factors that contribute to resilience. Currently, there is a lack of ecological assessments on mangrove forests in the Maldives, which made it difficult to understand and respond to the die-off of wetlands in early 2020. As there was no local expertise, the Maldivian government requested assistance from the Indian government. Amidst the COVID-19 travel restrictions, initial investigations were done by visiting experts from the Cochin University of Science and Technology. Early reports suggested that the presence of a fungus weakened the mangroves leading to die-off owing to water stress. However, it was noted that further research with larger sample sizes and additional tests is needed to confirm. Other possible causes that have been discussed include a rise in sea level, changes to the beach profiles and an increase in temperature.

As the land, air, and sea are intricately connected, there are possibilities of direct and indirect impacts on both land

and marine ecosystems when the environment degrades. A study in South East Asia found that haze causes a rise in the mortality of butterflies. For mangrove species such as *Bruguiera Cylindrica*, locally known as Kandoo, insects such as butterflies have a significant role in pollination. In 2013, a report on the impact of transboundary pollution in South Asia revealed that the concentration of ground-level ozone in Hanimaadhoo island in the northern Maldives was about 47 parts per billion (ppb) on average for September (2006-2012). Ozone concentrations above 40 ppb can be toxic to plants. However, the impact of transboundary pollution on mangroves has not been studied in the Maldives.

The north of the Maldives has been affected by haze caused by dust and smoke carried to the region from the Himalayan foothills across the Bay of Bengal due to shifts in seasonal winds. In November 2022, it was found that the air quality levels in the northern Maldives, such as in Kulhudhuffushi, had dropped to a critical level due to transboundary air pollution. According to the Health Protection Agency, the levels of dry particles known as PM2.5 pose significant health risks to vulnerable populations, including infants, young children, the elderly, pregnant women, and those with heart or lung conditions or allergies. Thus, communities were advised to limit their time spent outdoors, wear masks, and follow other precautions. The Ministry of Environment encouraged people to use the IQAIR Visual app to learn information about air quality and potential health risks to the public. During the same period, schools across neighboring Sri Lanka were closed for several days, and the health officials also advised people to limit their time spent outdoors and wear masks to minimize health risks.

Haze is a short-term effect of climate change in the sense that it is an immediate and visible impact that can occur as a result of climate-related events or activities. However, the underlying causes of haze, such as the burning of fossil fuels and other activities that contribute to climate change, can have long-term impacts that extend beyond the immediate effects of haze. Monitoring and evaluation of these activities are necessary to ensure that the right to a healthy environment is being upheld.

International technical cooperation can help ensure that the necessary monitoring and evaluation systems are in place and that the data collected is accurate and reliable. In order to effectively support affected communities, it is crucial to have a new finance mechanism for loss and damage that also prioritizes empowering vulnerable communities to have technologies and systems to monitor, evaluate, and facilitate evidence-based decision-making and develop strategies for reducing its impact on the Maldives and other affected countries to ensure the right to a healthy environment. ■



PHOTO: DHAKA TRIBUNE

Exploring the growth of the climate resilience academy for LDCs

Sumaiya Binte Selim

Climate change and development are related to each other in a very complex way for every country in the world. When it comes to addressing climate change, some specific jargons come in the way. Resilience is one of the most common words in the context of Climate Change. Tackling climate change without resilience building can't be possible. The idea of a resilience academy is undoubtedly important when it comes to this complex system of understanding and inclusion of different disciplines, not only from climate change backgrounds. As when it comes to the financing or understanding of any disaster or climatic

impacts, the research needs academicians who will guide through literature and past history, and when it comes to the implementation of any solution and monetary action, the economic practitioner from International to the government to the local level is needed for the allocation and liquefaction of the funding.

So, gathering all of the interested parties from academic as well as practice is needed, and there lies the importance of the academy like Climate Resilience Academy for LDCs (CRAL). The first phase of the academy took a broader context focusing on COVID-19. As its impact was severe and the academy could only connect the people online, the first version of the academy followed a virtual modality.

But considering the participants, it covers variation in practitioners and academics and also points to some more specific context with geographical specification, Phase 2 started working on some Precise fields of losses and damages, focusing on South Asia.

Gathering evidence based on Zimbabwe, Mexico, Nepal, Bangladesh, Tanzania, and Chile wasn't easy when discussing in a small group through the virtual platform for the first phase. So, following the availability and effectiveness of the academy, CRAL focused on South Asia in the second phase and included participants and mentors from Bangladesh, India, Nepal, Bhutan, Maldives, and Sri Lanka. Also, for the virtual modality, it was covid 19 that to be focused on but when it comes to the loss and Damage in the second phase in 2022, similarities and context with the similar region, the interaction got better.

At the same time, it comes to bringing all practitioners and academicians under one roof to mentor people from all branches of climate change is needed. So CRAL has excellent choices from mentors around the world following the relevance. And the participants are selected on the basis of application, which indicates their enthusiasm and knowledge. And when enthusiastic people gather to practice Losses and damages and different dimensions of this topic, it creates a proper learning mechanism. In the knowledge management and coordination or exchange of knowledge, CRAL is observed to be successful, but when it comes to the implementation of the knowledge as well as using that knowledge in different sectors, that would be a real win. Though people from the academy have started working on the inspiration, they gather from the academy to their professional life. Also, they are really into collaboration. And in the matter of collaboration or project proposal on the basis of the knowledge they gather from the academy, it's inspiring that some of the participants have already started getting funds for small projects. The academicians and the economic practitioners also started working from their places. The analytics from CRAL participants were research and investigation based. The participants got suggestions from the mentors and were also groomed by the mentors in an in-person guidance workshop in the second phase of the academy.

To include people from every phase and mainstream climate change, Loss and damage, and adaptation, these academies are more than needed. Because Climate change is not a subject only to climate scientists or researchers, rather, it includes every wing from national and international perspectives. To get people on the same page for tackling climate change, specific academies like CRAL are vital. ■

“ At the same time, it comes to bringing all practitioners and academicians under one roof to mentor people from all branches of climate change is needed ”

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Forest Damaged by forest fire at Rasuwa district of Nepal

PHOTO: COURTESY

Dealing with biodiversity conservation challenges through Loss and Damage approaches

Biodiversity, also referred to as biological diversity, is the variety of life found on Earth, either in the form of genetic composition, species population, or ecosystem variation. Biodiversity can be divided into three different types; Genetic diversity, Species diversity, and Ecosystem diversity. Loss of biodiversity, therefore, can be defined as the reduction or loss of species in a certain habitat either in terms of genetic composition, species population, or as a whole in the ecosystem number from a small defined geographical area to a global biosphere. The loss of biodiversity can be temporary or permanent, depending on whether the loss is reversible or irreversible. It is generally recognized that the world has been facing a biodiversity crisis in recent years. The rate of species loss is greater now than at any time in human history. For effective conservation, it is important to know what is being lost, where it is disappearing most quickly, what is causing the decline, and, perhaps most important, what measures must be taken to protect and restore species and their habitats (Miller, 2013).

Various kinds of research exhibit several causes for biodiversity loss, and the causes of biodiversity loss differ from country to country or from one geographic location to another depending upon the socio-economic condition, extreme climatic events, and existing country's policies and priorities. For instance, "Living Planet Index" (WWF, 2020) showed that different regions of the world have been experiencing different rates of biodiversity loss since 1970, with the highest loss in Latin America and the Caribbean (94%), followed by Africa (65%), Asia Pacific (45%), North America (33%) and Europe and Central Asia (24%) with an average drop of 68% population of mammal, bird, fish, reptile, and amphibian. The main reason behind the loss is found to be habitat destruction. And interestingly, climate change, which is not considered to be the biggest driver of biodiversity loss so far, is expected to take a lead role in the decades ahead. Besides the species with narrow distribution ranges (endemic species), species with a high degree of specialization, species with higher positions in the food chain or tropic level, and species with low reproductive rates are more susceptible to risks. They will be more impacted by climate change. The global temperature is expected to increase by 1.5 °C in the next 20 years, which can create serious shocks to biodiversity and force them to move out from the areas they have evolved for millions of years, leaving species only two options either to adopt or to extinct. Just imagine what could happen if the food crops that we rely on in our day-to-day life couldn't migrate or couldn't adapt. The result is pretentious; it damages our food system and pushes an additional huge population at risk of famine and malnutrition.

The main question is how to address the issues of species extinction due to climate change in loss and damage

mechanisms. In addition, do loss and damage able to tackle the gap that other financial institutions like Green Climate Fund are unable to address? For the effective implementation of Loss and Damage, each impact of climate change should be addressed separately under different headings. For each impact, a separate basket fund needs to be established, and funding needs to be allocated in each basket depending upon the severity of impacts, need, and priority. And also, the fund should be disseminated to different regions depending upon the severity and urgency. To be more specific, the

“ The loss of biodiversity can be temporary or permanent, depending on whether the loss is reversible or irreversible ”

above data on species extinction showed that there is a distinct variation between the global south and global north even though species extinction is a common problem in all geographical regions, and there are several other reasons behind the high extinction rate besides climate change, but it is still in concern because climate change is projected to be more severe in days to come and is going to accelerate species extinction at a higher rate. The other point that needs special consideration is the fund-flowing mechanism in loss and damage. If the loss and damage follow the same previous and complex mechanism adopted by GCF and Adaptation Fund, there will always remain a big question on the capacity to access the fund by Latin America and the Caribbean with the highest rate of species extinction followed by Africa and Asia Pacific regions to address issues and to minimize predicted losses in coming days. While talking about issues of biodiversity loss, we shouldn't forget the big climatic events like the recent floods in Pakistan and Bangladesh, which killed thousands of lives and destroyed millions of hectares of agricultural land and infrastructures equivalent to billions of



Landslide due to irratic rainfall at Rasuwa district of Nepal

PHOTO: COURTESY

dollars. Then what about thousands of aquatic and terrestrial ecosystems that had been partially or fully swept away by the same floods? And is it possible to calculate their loss in terms of economic value? Providing monetary value to species is very challenging because every species have its own roles and responsibilities in an ecosystem that are different from one another. And when talking about rare, endangered, and endemic plant species, it is even more challenging to access their monetary value as they are much more susceptible to changing climate. And almost all the impacts resulting from climate change ultimately affect biodiversity. For instance, an

“ Addressing biodiversity-related issues in loss and damage should always focus on preventive measures rather than curative one ”

increase in invasive species population, forest fire, drought, landslides, soil erosion, GLOF, flooding, increase in pest numbers, erosion, and diseases all have direct or indirect negative impacts on biodiversity. So while talking about loss and damage, we can't overlook biodiversity components. But now, biodiversity loss doesn't seem to be a priority for most countries even though they face a high rate of species extinction. And the failure of many countries to reach past conservation goals is all because of poor investment and accountability, and poor translation of the goals to national levels policies and priorities.

Addressing biodiversity-related issues in loss and damage should always focus on preventive measures rather than curative one because species or ecosystem, once lost, is lost forever. So we need more than individual actions through systemic change to act proactively to protect species from being extinct, which seems possible through effective management of loss and damage mechanisms. ■

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