

Submission by the United Nations Environment Programme (UNEP) to the United Nations Framework Convention on Climate Change

In response to the call for submissions on information from relevant organisations, bodies, networks, and experts on their progress on technical assistance for the implementation of relevant approaches at the local, national, and regional level, in developing countries that are particularly vulnerable to the adverse effects of climate change.

15 March 2022

A. Background

1. The UNEP has a unique role within the United Nations system for addressing climate-related impacts, loss, and damage, through a combination of science, policy, and action, along with the convening power of member states, governments, and other stakeholders. UNEP's [Medium-Term Strategy](#) and climate change sub-programme prioritises support to government and non-government development partners to ensure that actions are compatible with the long-term mitigation and resilience goals of the Paris Agreement.
2. On 6 August 2021, the UNEP had submitted its [first report](#) to the Executive Committee of the Warsaw International Mechanism (WIM Excom) for Loss and Damage on technical assistance to developing countries in addressing losses and damages arising from adverse climate change impacts by taking various approaches. This submission builds on the previous one and provides an overview of UNEP's continued contribution in fulfilling the objectives of the Santiago Network under the Warsaw International Mechanism in providing technical assistance to developing countries, and for inclusion of such information in the WIM Executive Committee's annual report as mandated in Decision 2/CMA.2

B. Progress on provision of technical assistance and approaches

3. UNEP has implemented several sciences, adaptation, technology transfer, stakeholder engagement, early warning systems and risk transfer mechanisms across at the local, national, and regional level, in developing countries that are particularly vulnerable to the adverse effects of climate change. Collectively these different areas of technical assistance are supporting countries avert, minimise and address loss and damage induced by climate change. This sub-section provides an overview of approaches and tools UNEP can offer to the loss and damage stream of work that can be scaled-up in programmes and policies.
4. With *science underpinning policy- and decision-making*, the UNEP hosted Intergovernmental Panel on Climate Change (IPCC) Secretariat launched the [Working Group II contribution to Impacts, Vulnerability and Adaptation report](#) in February 2022. The 18 Chapters and 7 Cross-Chapter Papers of the Working Group II Report assess the impacts of climate change on nature and humanity, and their capacities and limits for adaptation. The report also assesses economic and non-economic losses and damages resulting from climate change, including production of regional climate assessments and Global to Regional Atlas. Through the (IPCC), the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and its flagship UNEP flagship reports (e.g., the Adaptation and Emissions Gap Report), UNEP is deploying the most up-to-date, state-of-the-art knowledge on sectoral impacts, science on impacts of climate change and supporting UNFCCC policy process in the course.
5. Further to *generation and provision of scientific knowledge*, UNEP is supporting demand-driven technical assistance to climate information, early warning systems and capacity building. These projects and

programmes support country decision-makers improve capacity to use information on climate change impacts for decision-making purposes. Further, they support enhancement of data, information and knowledge, resilience of livelihoods of the most vulnerable populations – enabling resilience of health and well-being, food, and water security. These projects/programmes deploy a holistic and integrated package of support to develop national capacity for climate information services and impact-based multi-hazard early warning systems (MHEWS) that advance anticipatory action on loss and damage, such as: transforming and strengthening policies, legislation and delivery models for climate services and MHEWS to mainstream climate information into climate-responsive planning and development; enhancing technical, technological and infrastructural capacity for observations, monitoring, forecasting and analysis of weather and climate data; increase generation and use of relevant, science-based data and information for decision making; establishing people-centred, impact-based MHEWS tailored to specific needs and vulnerabilities of countries, including gender considerations, as a foundation for strengthened adaptive capacity and reduced exposure to climate induced loss and damage; and improving awareness and understanding of climate induced impacts to inform better preparedness, disaster risk reduction and anticipatory action. Examples include [Pacific Small Island Developing States](#), [Timor-Leste](#), Azerbaijan, El Salvador, Ghana, Maldives and Sudan.

6. UNEP likewise is supporting countries *identify [Ecosystem-based Adaptation \(EbA\)](#) opportunities that promise major co-benefit and adaptation payoffs* through the restoration and protection of key ecosystems and their services. Key approaches implemented in countries to address loss and damage include: *improved agriculture practices, resilient infrastructure standards, city design, integrated coastal zone planning, soil and water conservation, eco-system restoration, infrastructure-related adaptation, and ecosystem protection approaches*. UNEP is currently supporting over **50 Ecosystem-based Adaptation projects (USD330 million)**, funded primarily by the Least Developed Countries Fund operated by the Global Environment Facility (GEF), the Adaptation Fund and the Green Climate Fund (GCF). Combined, these projects are aiming to **restore around 113,000 hectares of ecosystems while benefitting 2.5 million people around the world**. UNEP is also assisting vulnerable developing countries in their efforts to develop National Adaptation Plans (NAPs). UNEP is currently supporting 19 countries to advance NAPS which integrate EbA and strengthen countries with institutional arrangements to undertake climate risk assessments across sectors. A dedicated Guideline¹ for Integrating EbA into NAPs was launched in September 2021 for integrating ecosystem-based options within the formulation, implementation, and review of NAPs.
7. As co-host of the [UN Decade for Ecosystem Restoration](#), UNEP is supporting *efforts to prevent, halt, and reverse the degradation of ecosystems worldwide*. UNEP and Food and Agriculture Organisation, as the lead UN agencies, have jointly established a Multi-Partner Trust Fund for the implementation of core activities of the UN Decade. The partner network has grown to 90+ including a range of development partners and institutions.
8. Through the [Climate Technology Centre and Network \(CTCN\)](#), UNEP has collaborated with 106 developing countries to implement technology development and transfer assistance. The CTCN, a potential model for the operationalisation of the Santiago Network, has received a total of 321 requests for technical assistance, including 14 multi-country requests. Approaches relevant to addressing loss and damage implemented in countries include: *capacity building, technology transfer mechanisms, Corporation and coordination on technology transfer, gender mainstreaming, stakeholder engagement, and project/programme development*. For example, in Asia-Pacific, the CTCN support has focused on water-related adaptation measures (e.g., nature-based solutions and integrated water resource management, gravity driven membrane technology,

¹ Available: <https://www.unep.org/resources/toolkits-manuals-and-guides/guidelines-integrating-ecosystem-based-adaptation-eba>

gallery infiltration systems, monitoring system design, agro-met DSS) and deployment of local climate information systems and early warning systems (e.g., impact-based forecasting, coastal risk mapping, multi-hazard platforms, wave modelling). UNEP's recently established [Copenhagen Climate Centre](#) will extend further support to vulnerable developing countries on climate and sustainable development with active projects in 71 countries.

9. Other areas of technical assistance to countries in addressing loss and damage resulting from slow-onset events, extreme disaster events, non-economic and economic losses, and socio-cultural impacts include: *building resilience of communities and livelihoods, supporting regional to global interactive platform for catalysing knowledge and action and development of risk transfer mechanisms and platforms*. Relevant technical assistance and approaches to address loss and damage in vulnerable developing countries and of interest to the WIM Excom include: *impact modelling, disaster and emergency preparedness, social protection, reconstruction, alternative/climate-resilient livelihood provision, mainstreaming of climate induced risks and vulnerabilities, design of financial instruments, and national finance and funding instruments*. Please see **Attachment 1** to this submission for details relating to other areas of technical support to countries, related approaches to address loss and damage and case examples.

C. Lessons and Opportunities

10. **Dedicated access to finance for loss and damage:** UNEP's technical support for the implementation of relevant approaches to address loss and damage is embedded in existing adaptation, mitigation, technology transfer and other environment and sustainable development initiatives as a holistic approach to climate action at the local, national, and regional level, in developing countries. As highlighted in UNEP's [Adaptation Gap Report](#), costs for adaptation and mitigation in vulnerable developing is increasing as climate vulnerabilities increase. For example, annual adaptation costs in developing countries alone are currently estimated to be in the range of US\$70 billion, with the expectation of reaching US\$140–300 billion in 2030 and US\$280–500 billion in 2050². Similarly access to international climate funds remains a significant challenge for developing countries. Dedicated and additional finance is critical to enhance anticipatory and planned action, implementation and scaling-up approaches to limit climate related loss and damage.
11. **Systematic awareness of loss and damage:** While loss and damage is experienced by vulnerable communities, the understanding of the concept remains at conceptual and abstract level for policymakers, practitioners, and it is as such a challenge to conceptualize the diversity of issues at local, national, and regional levels. Owing to this poor understanding, a key gap relates to the dominant economic lens of characterizing climate-induced impacts in different regions, and non-economic (culture, tradition, ecosystem, mental and emotional wellbeing) is poorly understood. There is an opportunity to build within adaptation and mitigation programmes a holistic consideration of ALL climate change impacts, therefore maximising opportunities to address interrelated economic and non-economic loss and damage within responses. Equally important are understanding of the needs, gaps and barriers related to addressing of loss and damage and available approaches across different regions.
12. **Limits to small-scale and one-off ecosystem-based approaches:** Recent IPCC Report (IPCC 2022) finds that with increasing warming some losses driven by climate change are already irreversible, such as species extinctions, impacts of hydrological changes resulting from the retreat of glaciers, losses to vulnerable terrestrial, freshwater, and coastal and open ocean marine ecosystems. As such effectiveness of ecosystem-based management and ecosystem protection approaches to address loss and damage would need to garner,

² UNEP. 2021. *Adaptation Gap Report 2020*. Nairobi, Kenya. Available: <https://www.unep.org/resources/adaptation-gap-report-2021>

large-scale, integrated, and multi-sectoral solutions that address social inequities, along with economic and non-economic loss and damage resulting from climate change.

13. **Support to knowledge exchange and co-creation:** The [Glasgow Climate Pact](#) (2021) encourages the strengthening of partnerships between developing and developed countries, funds, technical agencies, civil society and communities to enhance understanding of how approaches to averting, minimizing and addressing loss and damage can be improved (Decision 1/CMA.3, para. 72). In this regard, the UNEP convened [Global Adaptation Network](#) (GAN) has generated a worldwide platform to support exchange of climate change knowledge in a variety of ways. Of relevance, would be the regional networks and partners hosted by the GAN, each of which brokers knowledge services in respective regions to enable early action on loss and damage, feeding into UNFCCC processes. GAN has developed regional nodes that could be useful to the WIM such as the Asia Pacific Adaptation Network, Regional Gateway for Technology Transfer and Climate Action in Latin America and the Caribbean (REGATTA) and Ecosystem-based Adaptation for Food Security in Africa Assembly (EBAFOSA).

Contact Person:

Niklas Hagelberg

Coordinator - Climate Change Programme
UN Environment Programme
E: niklas.hagelberg@un.org

Jessica Troni

Chief, Climate Change Adaptation Unit
Ecosystems Division, UN Environment Programme
E: jessica.troni@un.org

Attachment 1

Relevant areas of technical assistance	Types of climate-related loss and damage	Approaches to avert, minimise and address loss and damage	Relevant UNEP Division/Unit	Progress on technical assistance for the implementation of relevant approaches	Geographic Coverage	Case Examples	Further information
Research, Science and Knowledge	Multiple-economic, non-economic, slow-onset events, extreme disaster events	Science, Knowledge Sharing, supporting uptake of scientific knowledge in UNFCCC, scientific and global to regional platforms	World Adaptation Science Programme (WASP), IPCC Secretariat.	The IPCC's sixth assessment reports has provided comprehensive assessment of the state of scientific, technical, and socio-economic knowledge on climate change, its impacts and future risks, and options for reducing the rate at which climate change is taking place. The World Adaption Science Programme has convened a multi-stakeholder governance structure to help bridge the science-policy interface between scientific knowledge and needs to inform policies and action, inclusive of loss and damage, among decision makers at all levels and across all sectors, especially in developing, vulnerable countries.	Global -multiple countries and region	The IPCC's most report, WG-II- Impacts, Adaptation and Vulnerability, has extensively addressed the issue of loss and damage resulting from climate change, including production of regional climate assessments and Global to Regional Atlas. The Working Group II contribution was considered during the 55th Session of the IPCC and the 12th Session of the Working Group II from 14 to 27 February 2022. The Summary for Policymakers was released during a press conference on 28 February 2022. The WASP has catalysed the delivery of climate products and services, including the Adaptation Futures Conference and Science for Adaptation Policy Brief Series.	https://www.ipcc.ch/ https://www.unep.org/explore-topics/climate-action/what-we-do/climate-adaptation/world-adaptation-science-programme-0
Policy and Technology	slow-onset events, rapid disaster events	Capacity building, technology transfer mechanisms, Corporation and coordination on technology transfer, Gender mainstreaming, stakeholder engagement, project/ programme development	Climate Technology Centre and Network (CTCN)	The CTCN has collaborated with 106 developing countries to implement technology development and transfer assistance. The Centre has received a total of 321 requests for technical assistance, including 14 multi-country requests. Almost half of the requests received have been fully implemented and completed (143), while 64 are currently under implementation, 90 are in the response plan design phase and 24 are being assessed.	Africa, Latin America, Asia-Pacific	In Asia-Pacific, support has focused on water- related adaptation measures (e.g., nature-based solutions and integrated water resource management, gravity driven membrane technology, gallery infiltration systems, monitoring system design, agro-met DSS); local climate information systems and early warning systems (e.g., impact-based forecasting, coastal risk mapping, multi-hazard platforms, wave modelling). In Latin America, support has prioritised the water sector (groundwater monitoring, drought risks modelling, M&E systems); coastal zones (vulnerability assessment	https://www.ctcn.org/

						and risks management). In Africa, recent support focuses on natural resource management (e.g., aquifers, forest monitoring through drones, water basin management) and sustainable cities (e.g., urban resilience, green infrastructure).	
		Policy development, national planning, early-stage project formulation, private sector and business models, financial structures, and local access to value chains, Green and Digital Technologies	UNEP Copenhagen Climate Centre	UNEP Copenhagen Climate Centre is a leading international advisory institution on climate and sustainable development with active projects in 71 countries.	Global -multiple countries and region	In Ghana, the initial capital investment for implementing new technologies is too expensive for smallholders, which hinders their diffusion and addressing of agriculture income losses resulting from climate events. Support is being provided to vulnerable smallholder framers to develop durable inclusive and sustainable business models (ISBMs) to cooperate and act as a stronger supplier in the vegetable value network. To upscale farmers' use of irrigation and soil amendment technologies, new business models will creating new opportunities for co-investment, and facilitating knowledge sharing with producers, suppliers, processors, retailers, and customers. The project will furthermore analyse the dynamics of irrigation-technology diffusion in sub-Saharan Africa, which is an important context for ISBMs and producer upgrading.	https://unepdtu.org/
Resilience of ecosystem and Nature-based solutions	slow-onset events, rapid disaster events, economic, non-economic, ecosystem services	Transformational adaptation, improved agriculture practices, resilient infrastructure standards, city design, soil, and water conservation, ecosystem restoration, infrastructure-related, ecosystem-based	Climate Change Adaptation Unit, and various units of Ecosystem Division	Support to over 50 ecosystem-based adaptation projects, funded primarily by the Least Developed Countries Fund operated by the Global Environment Facility (GEF), the Adaptation Fund and the Green Climate Fund (GCF). Combined, these projects are aiming to restore around 113,000 hectares of ecosystems while benefitting 2.5 million people around the world. UNEP in addition supports	Global -multiple countries and region	Climate Change Adaptation Unit's project portfolio covers a range of ecosystem services, including coastal restoration in the Seychelles and Albania through planting of mangroves to protect against projected increased occurrence of extreme weather events, such as cyclones, and raising sea-levels.	https://www.unep.org/explore-topics/climate-action/what-we-do/climate-adaptation

		management, ecosystem protection approaches (e.g., large-scale ecosystem restoration, REDD+)					
Resilience of communities and livelihoods	Climate induced conflicts, displacement, migration, agriculture losses, income loss, loss of lives, indigenous knowledge, and culture	Risk assessment, Impact modelling, disaster and emergency preparedness, social protection, reconstruction, alternative/climate-resilient livelihood provision, mainstreaming of climate induced risks and vulnerabilities, design of financial instruments, national finance instruments	Resilience to Disasters and Conflicts Global Support Branch; Climate Change Adaptation Unit; Post-Conflict and Disaster Management Branch	Multiple projects are the creation of “climate-smart” livelihoods, often involving a shift to more sustainable practices that relieve pressure on a given ecosystem while deriving more benefits from it. Focus is also on diversifying livelihoods completely away from highly climate-vulnerable activities such as rainfed agriculture, allowing stressed ecosystems to recover and continue providing their services. UNEP has more than 18 ongoing projects where one-on-one support is provided to countries to advance climate risk assessment and modelling through their National Adaptation Plan (NAPs). In addition, the NAP- Global Support Programme (NAP-GSP) – This project, funded by the Global Environment Facility, is run jointly with UNDP, and	Global -multiple countries and region	UNEP country recovery programmes are helping post-crisis countries strengthen environmental management to support post-crisis recovery, build resilience and support the consolidation of peace. Following a post-crisis environmental assessment, UNEP has assisted national governments to address environmental priorities through recovery programmes that are tailored to country-specific needs. UNEP has established project offices in country to coordinate environmental work, as is currently the case in Afghanistan, Sudan, South Sudan, and Haiti. Work has focused on helping local and national authorities develop effective laws, policies, and institutions, to providing training and equipment, and to help countries to manage their natural resources in a more effective and sustainable manner. UNEP has also catalysed community-based ecosystem restoration and sustainable reconstruction projects in sites damaged by or vulnerable to conflicts and climate-	https://www.unep.org/explore-topics/disasters-conflicts

				provides support to over 45 countries		induced disasters. UNEP adaptation projects have produced climate risk/vulnerability assessments. For instance, as one of the activities and deliverables of Building sub-national capacities for the implementation of the National Adaptation Plan in Costa Rica project, Current and future climate risk assessments have been finalized, which will be useful for decision-making. These climate risk assessments and are being used as a basis to identify adaptation needs and actions at the local level. Another example is a report: Vulnerability and Impact Assessment: Ecosystem-based Adaptation for Rural Resilience (EbARR) in Tanzania produced from the UNEP EbA project in Tanzania.	
Interactive platform for catalysing knowledge and action	slow-onset events, rapid disaster events, economic, non-economic, ecosystem services, culture, socio-economic	knowledge-sharing platform, Assistance with access to finance, links with humanitarian-adaptation-disaster risk reduction sectors	Global Adaptation Network	Global Adaptation Network (GAN) has generated a worldwide platform to support exchange climate change knowledge in a variety of ways, including sharing of best practices to address climate-induced impacts. As an umbrella organization spanning multiple continents, the GAN hosts regional networks and partners, each of which brokers knowledge services in respective regions to enable early action on loss and damage, feeding into UNFCCC processes. GAN has developed regional nodes useful to the WIM as follows: <ul style="list-style-type: none"> • The Asia Pacific Adaptation Network (APAN) • Regional Gateway for Technology Transfer & Climate Action in Latin America and the Caribbean (REGATTA) • Ecosystem-based Adaptation for 	Regional-Africa, Latin America, Asia-Pacific	The Global EbA Fund is co-implemented by IUCN and UNEP and funded by the International Climate Initiative (IKI) of the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety of Germany (BMU/IKI). IUCN and UNEP support target countries in implementing ecosystem-based measures to help people to adapt to the adverse effects of climate change. The GAN Secretariat has organized regional stakeholder dialogue processes through a number of regional or global events. These networks and events would be useful to the WIM to reach out to partners in the African, Latin American, Asian Pacific, and West Asian regions, with the aim to strengthen action in regions.	https://www.unep.org/gan/ https://globalebafund.org/

				<p>Food Security in Africa Assembly (EBAFOSA)</p> <ul style="list-style-type: none">• The West Asia Regional Network on Climate Change (WARN-CC)• EcoAdapt in North America			
--	--	--	--	--	--	--	--

Risk transfer mechanisms and platforms	Rapid disaster events, physical assets (infrastructure, assets)	Design of financial instruments, risk finance tools and instruments, forecast-based finance insurance	UN Net-Zero Insurance Alliance and UNEP's Principles for Sustainable Insurance Initiative to host V20 Sustainable Insurance Facility	The UN-convened Net-Zero Insurance Alliance (NZIA) is a group of over 20 leading insurers representing more than 11% of world premium volume globally. The NZIA was launched at the G20 Climate Summit in Venice in July 2021 by its eight founding members that are active in the space of insuring for climate-induced disasters. These insurers are building on their climate leadership as investors through their membership of the UN-convened Net-Zero Asset Owner Alliance (NZAOA) established in 2019.	Global -multiple countries and regions	The NZIA is convened by the UN Principles for Sustainable Insurance (PSI): the UNEP-convened initiative is the largest collaboration between the UN and the global insurance industry. The commitment signed by the members of the NZIA is accredited by the UN Race to Zero and the alliance is a member of the Glasgow Financial Alliance for Net-Zero. The NZIA have also committed to management of climate-related losses such as developing and offering insurance and reinsurance products, solutions and arrangements for low-emission and zero-emission technologies, nature-based solutions that are key to the net-zero transition and improving claims management.	https://www.unepfi.org/net-zero-insurance/
Climate information services and early warning systems	Slow-onset events, rapid disaster events, economic and non-economic	Multi-hazard impact modelling, scientific capacity building, downscaling of climate projections, Design of projects and programmes	Science Division	The Systematic Observations Finance Facility (the SOFF): The SOFF is an innovative new financing mechanism for weather and climate observations. As co-creator of the SOFF, UNEP is playing a key role in supporting increased availability of weather and climate data, which are critical for improved forecasts and early warning systems that help to avert, minimize, and address climate-induced loss and damage, especially in SIDS and LDCs. Such data is also essential as the foundation for extreme weather event attribution, which is key to quantifying loss and damage and facilitating that any funds from international loss and damage financial mechanisms are equitably distributed. Climate Information / Early Warning Systems (CIEWS) Portfolio: UNEP's CIEWS projects focus on building and	Global -multiple countries and regions	A transformative new programme initiated by the UNEP and GCF aims to establish climate and ocean information services and multi-hazard early warning systems in Pacific Small Island Developing States, which are among the most vulnerable in the world when it comes to climate change, natural disasters and increasingly frequent or intense extreme climate events such as tropical cyclones, flooding and drought. At its 27th Board meeting on 10 November 2020, the GCF approved the submission of a US\$49.9 million programme – of which USD 47.4 million represents the GCF grant – on Enhancing Climate Information and Knowledge Services for resilience in 5 island countries of the Pacific Ocean. The multi-country programmatic initiative covers the Cook Islands, Niue, Palau, the Republic of the Marshall Islands and Tuvalu, countries already at the forefront of experiencing climate related loss and damage.	

				developing national capacity for climate information services and impact-based multi-hazard early warning systems in developing countries, particularly in LDCs and SIDS.			
Climate Litigation	Slow-onset events, rapid disaster events, economic and non-economic, displacement	Publishing knowledge products	Law Division	The UNEP Global Climate Litigation Reports provide a review of the current state of climate change litigation globally, as well as an assessment of global climate change litigation trends. Two reports have been produced to-date (2017, 2019) and the next report will be launched in 12/2022	Global -multiple countries and regions	UNEP hosts the Climate Change Litigation Database. The databases of climate change litigation are twofold: one for U.S. climate change litigation and one for non-U.S. cases. The U.S. chart is updated monthly, and currently includes 1200 cases with links to 6117 case documents. The Non-U.S. Climate Litigation Chart was created in 2011 and is updated regularly. It currently includes 358 cases, with links to 488 case documents.	https://www.unep.org/resources/report/global-climate-litigation-report-2020-status-review