



STATE RESPONSIBILITY FOR CLIMATE-INDUCED TERRITORIAL LOSS: BRIDGING THE CAUSATION AND ENFORCEMENT GAP THROUGH A CLIMATE TERRITORIAL LOSS PROTOCOL

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ABSTRACT

Climate-induced territorial loss exposes a structural problem in public international law. The law increasingly recognises that States owe duties of prevention, due diligence, marine environmental protection, climate mitigation and human-rights protection, and that breach may engage the ordinary consequences of State responsibility. Yet a State whose territory is progressively inundated or rendered uninhabitable still lacks a universal, dedicated procedure to determine contribution, quantify cumulative climate injury, separate solidarity finance from responsibility-based reparation, preserve legal personality and maritime entitlements, and produce an enforceable remedy. The difficulty is therefore not that international law is silent; it is that the existing rules were built around bilateral injury, identifiable causal chains and discrete disputes.

This paper refines the question from whether international law can address climate-induced territorial loss to how its remedial and enforcement architecture should be completed. It examines the limits of the existing regime through the law of State responsibility, the UNFCCC and Paris Agreement, UNCLOS, customary environmental law and human-rights obligations. It then tests the framework against leading environmental, human-rights and climate authorities. These authorities demonstrate that the substantive legal building blocks are increasingly strong but fragmented.

The paper proposes a Climate Territorial Loss Protocol: a stand-alone supplementary treaty that would establish a scientific attribution panel, a two-track finance and reparation system, a dedicated claims chamber with consent-based compulsory jurisdiction, a Montreal Protocol-

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style compliance mechanism, and express rules preserving statehood and maritime entitlements. Analogies to tested international compensation and compliance regimes demonstrate that these institutional features are legally and administratively practicable, even though none is itself a direct climate precedent.

Keywords: Climate Change, State Responsibility, Territorial Loss, Compliance, Glacier Collapse, Mountain States.

INTRODUCTION

Sea-level rise is converting a scientific problem into a problem of legal continuity. Low-lying States may confront recurrent inundation, coastal erosion, saltwater intrusion, degradation of freshwater supplies and loss of habitable land. The injury is not confined to property. Physical retreat can affect territorial sovereignty, maritime entitlements, governmental capacity, nationality, cultural heritage and the ability of communities to remain in place. The consequence is unusual because the underlying process is cumulative and global while the legal injury is experienced in specific territories by identifiable States and peoples.¹

Conventional law of State responsibility is not designed for such a fact pattern. Under the Articles on Responsibility of States for Internationally Wrongful Acts (ARSIWA), responsibility turns on attributable conduct and breach of an international obligation. Reparation follows once an internationally wrongful act and legally relevant injury are established. Climate change complicates each stage. Greenhouse gas emissions are produced by many States over many decades; sea-level rise results from a chain of global physical processes; local vulnerability is affected by subsidence, coastal morphology and adaptation capacity; and the loss of territory may be irreversible. The legal question is consequently one of translation: how should attribution science, cumulative causation and irreversible injury be translated into legal standards capable of producing predictable remedies?²

¹ International Law Commission, 'Sea-level rise in relation to international law: Final report of the Study Group' in *Report of the International Law Commission: Seventy-sixth session* (2025) UN Doc A/80/10, ch IV and annex ('ILC Final Report'); United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3, arts 5-7, 47, 121 ('UNCLOS').

² International Law Commission, Articles on Responsibility of States for Internationally Wrongful Acts, annexed to UNGA Res 56/83 (12 December 2001) UN Doc A/RES/56/83, arts 1-2, 31, 34-39, 47-48 ('ARSIWA'); see also International Law Commission, 'Draft Articles on Responsibility of States for Internationally Wrongful Acts, with Commentaries' [2001] YBILC vol II (Part Two) 31.

The 2025 ICJ advisory opinion changes the starting point. It confirms that the climate regime is not a self-contained code that displaces general international law and states that wrongful climate conduct can, in appropriate circumstances, engage the ordinary consequences of State responsibility. It also recognises that causal questions must be addressed with the assistance of science and that multiple States may bear responsibility for related wrongful conduct. Yet the Opinion does not create a standing tribunal for territorial loss, an automatic contribution formula, or a dedicated compensation fund. Those institutional questions remain open.³

The same pattern appears in the law of the sea. UNCLOS contains binding duties to protect and preserve the marine environment, while the 2025 ILC work records strong support for preserving established maritime zones and for the continuity of statehood of climate-affected States. These developments reduce the risk that climate-driven physical change will automatically erase legal status, but they do not by themselves provide a complete mechanism for reparation or mobility. The problem has therefore moved from recognition to implementation.⁴ This paper advances a specific proposition. The legal gap should not be addressed by replacing the existing law of State responsibility or by treating all climate finance as compensation. Instead, a supplementary treaty should create a procedural bridge between the climate regime, ARSIWA and the law of the sea. The proposed Climate Territorial Loss Protocol would establish predetermined rules for scientific attribution, financing, claims, compliance, statehood and mobility. Its purpose would be not to make climate harm disappear, but to ensure that a participating State does not face a remedial vacuum merely because the injury is cumulative, probabilistic or partly irreversible.⁵

The research question is therefore: whether the existing international legal framework provides a sufficiently effective mechanism for responsibility and remedy when climate change causes substantial loss of territory or habitability, and, if not, whether a treaty-based enforcement and claims mechanism can close that gap while remaining consistent with established principles of State responsibility, equitable burden-sharing and consent to international jurisdiction. The

³ *Obligations of States in respect of Climate Change* (Advisory Opinion) ICJ General List No 187 (23 July 2025), UN Doc A/79/979, paras 405-420 (applicability of the general rules of State responsibility), 427-432 (attribution and plurality of responsible States), 433-438 (causation), 445-455 (legal consequences) ('ICJ Climate AO 2025').

⁴ UNCLOS (n 1) arts 192, 194; *Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law* (Advisory Opinion, 21 May 2024) ITLOS Case No 31, paras 179, 441 ('ITLOS COSIS AO'); ILC Final Report (n 1).

⁵ The 'Climate Territorial Loss Protocol' is the author's proposed legal instrument. It is not an existing treaty or rule of customary international law.

argument is that the substantive law is now sufficiently developed to support such a mechanism; the missing element is a dedicated institutional architecture.⁶ Section 8.5 tests that argument against the most recent instance of climate-linked loss of land: the August 2026 Bhotekoshi-Trishuli disaster in Nepal, which Nepal's Prime Minister placed before the United Nations General Assembly in the language of responsibility and reparation.

THE PRECISE LEGAL PROBLEM: A SUBSTANTIVE DUTY WITHOUT A COMPLETE REMEDIAL ARCHITECTURE

Primary Obligations and Secondary Responsibility: International responsibility is ordinarily analysed in two stages. Primary rules determine what States must do; secondary rules determine the consequences of breach. ARSIWA Article 2 requires attributable conduct and breach of an international obligation. In climate disputes, primary obligations can arise from the UNFCCC and Paris Agreement, UNCLOS, human-rights treaties and customary international law. Secondary responsibility does not create a new climate duty; it supplies the legal consequences once a duty has been breached.⁷ That distinction matters because the absence of a dedicated compensation procedure cannot be equated with the absence of responsibility. The 2025 ICJ advisory opinion expressly rejects the idea that the climate treaties exhaust the applicable law. A State may therefore be assessed under the general law of State responsibility even though the Paris Agreement's loss-and-damage arrangements are facilitative rather than adjudicative. The precise difficulty is institutional: existing rules identify possible duties and consequences, but no single procedure routinely links scientific contribution, territorial injury, reparation and enforcement.⁸

Attribution is easier than Apportionment: Attribution to a State is not the same as attributing the whole physical injury to that State. Emissions generated within a state's jurisdiction are attributable conduct. The harder questions are whether the State breached a particular legal obligation, whether the breach contributed sufficiently to the relevant risk or injury, and what share of the resulting remedy can be allocated to that respondent. The 2025 ICJ opinion recognises that climate responsibility may involve plurality: several States can engage

⁶ ICJ Climate AO 2025 (n 3) paras 405-420.

⁷ ARSIWA (n 2) arts 1-2.

⁸ ICJ Climate AO 2025 (n 3) paras 410-420.

responsibility through their own acts or omissions, without requiring one State to be the exclusive physical cause of climate change.⁹

Current law nevertheless lacks a generally accepted apportionment formula for territorial loss. ARSIWA Article 47 recognises the possibility of multiple responsible States, but it does not establish a scientific method for converting global emissions into a percentage of a specific territorial injury. The result is a gap between a legally plausible theory of cumulative responsibility and a procedurally usable method of calculating a respondent's share. A claimant should not have to prove that one State alone caused sea-level rise; but a respondent should not automatically become liable for the entire loss merely because it contributed to the global process.¹⁰

Causation and the Structure of Climate Science: The traditional causal requirement is not necessarily fatal to climate claims. The 2025 ICJ opinion explains that causation for reparation requires a sufficient causal nexus and that scientific evidence can establish both the anthropogenic contribution to a phenomenon and, in appropriate cases, the connection between particular conduct and particular consequences. The Court also emphasises that legal causation cannot simply be presumed from the fact of climate change. This approach leaves room for a differentiated standard in which attribution science establishes contribution, event attribution identifies altered probabilities or intensities, and legal analysis determines whether the contribution is sufficiently direct and certain for the remedy sought.¹¹

The proposed approach therefore distinguishes three questions. First, did the respondent's conduct breach a primary obligation? Secondly, did that breach materially contribute to the climate-related risk or injury for which relief is sought? Thirdly, what remedial allocation is proportionate to that contribution and to the nature of the breached obligation? This is narrower than imposing strict global liability and more realistic than demanding exclusive causation. It also allows different remedies to respond to different evidentiary strengths: cessation and compliance measures may require less proof of monetary loss than a claim for compensation for a quantified territorial asset.¹²

⁹ Ibid paras 427-432.

¹⁰ ARSIWA (n 2) art 47 and commentary; ICJ Climate AO 2025 (n 3) paras 430-432.

¹¹ ICJ Climate AO 2025 (n 3) paras 433-438.

¹² Ibid.

Reparation where Restoration is Impossible: ARSIWA Article 31 adopts full reparation as the governing principle, while Articles 34-39 identify restitution, compensation and satisfaction and their modalities. Environmental jurisprudence confirms that restoration costs, ecosystem services and other forms of environmental damage can be valued. But territory presents a harder case. A submerged island cannot simply be restored through money; territorial sovereignty, cultural institutions, ancestral sites and collective identity are not interchangeable with market value. The problem is therefore not that reparation is conceptually unavailable, but that the ordinary menu of remedies must be supplemented by continuity measures.¹³

For territorial loss, a remedial package should therefore be plural. It may include protective infrastructure and ecosystem restoration where feasible, adaptation and relocation costs, compensation for demonstrable economic and environmental loss, guarantees of non-repetition, preservation of statehood and maritime entitlements, and legal safeguards for persons displaced by the resulting conditions. Treating every component as a monetary tort would distort the nature of the injury; treating all of it as mere development assistance would erase the distinction between solidarity finance and responsibility-based reparation.¹⁴

The Enforcement and Forum Gap: Even when responsibility can theoretically be established, forum is an independent obstacle. The ICJ requires jurisdictional consent in contentious proceedings. UNCLOS provides compulsory settlement for many disputes, but the availability of a particular forum and the scope of exceptions vary by State. Human-rights bodies address individual and community harm rather than inter-State territorial reparation. Climate treaty procedures, by contrast, are primarily facilitative. The result is a fragmented system in which a claimant may have a substantive right but no straightforward route to obtain a single integrated decision on causation, territorial injury and remedy.¹⁵

¹³ ARSIWA (n 2) arts 31, 34-39 and commentary; *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v Nicaragua)* (Compensation) [2018] ICJ Rep 15, paras 41-43, 52 ('*Certain Activities* (Compensation)').

¹⁴ ICJ Climate AO 2025 (n 3) paras 445-455.

¹⁵ Statute of the International Court of Justice (adopted 26 June 1945, entered into force 24 October 1945) 33 UNTS 993, art 36 ('ICJ Statute'); UNCLOS (n 1) Part XV; Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) 3156 UNTS 79, art 15 ('Paris Agreement'); Decision 20/CMA.1, 'Modalities and procedures for the effective operation of the committee to facilitate implementation and promote compliance referred to in Article 15, paragraph 2, of the Paris Agreement', UN Doc FCCC/PA/CMA/2018/3/Add.2 (19 March 2019) ('Decision 20/CMA.1').

The enforcement gap is especially visible in the Paris Agreement Implementation and Compliance Committee. Article 15 created a facilitative, expert-based body designed to promote implementation and compliance. Its procedures are transparent, non-adversarial and non-punitive. This is valuable for cooperative treaty performance, but it is not a substitute for a claim's tribunal. Consistently with this, the 2025 ICJ opinion held that the existence of the Article 15 mechanism does not displace the customary rules of State responsibility. A State facing permanent territorial loss therefore remains dependent on ordinary inter-State responsibility rules and whatever forum is independently available.¹⁶

THE EXISTING INTERNATIONAL LEGAL FRAMEWORK

UNFCCC and Paris Agreement: The UNFCCC and Paris Agreement establish the principal global climate framework. Their importance for territorial loss is both substantive and procedural. The regime requires mitigation, adaptation, reporting, cooperation and progressively more ambitious climate action. It also recognises the importance of averting, minimising and addressing loss and damage. Yet Article 8 of the Paris Agreement was deliberately designed as a cooperative and facilitative field rather than a bilateral liability code. Decision 1/CP.21, paragraph 51, states that Article 8 does not provide a basis for liability or compensation. This political settlement is not identical to a rule that liability is impossible under all other applicable law.¹⁷

The 2025 ICJ opinion is important precisely because it rejects a closed-system reading. The loss-and-damage architecture may deliver finance, coordination and technical assistance without deciding which State committed an internationally wrongful act. The paper's proposed mechanism therefore preserves a conceptual distinction: solidarity-based finance should remain available without proof of wrongful conduct, while responsibility-based reparation should remain available when the requirements of State responsibility are met. The two pathways should interact without being merged.¹⁸

UNCLOS and Marine Environmental Protection: UNCLOS supplies several binding obligations relevant to climate-induced territorial loss. Articles 192 and 194 require States to

¹⁶ Paris Agreement (n 15) art 15(2); Decision 20/CMA.1 (n 15) annex; ICJ Climate AO 2025 (n 3) paras 410-420.

¹⁷ Paris Agreement (n 15) art 8; Decision 1/CP.21, 'Adoption of the Paris Agreement', UN Doc FCCC/CP/2015/10/Add.1 (29 January 2016) para 51.

¹⁸ ICJ Climate AO 2025 (n 3) paras 410-420.

protect and preserve the marine environment and to take measures to prevent, reduce and control pollution. Article 235 addresses responsibility and liability for fulfilment of those obligations. ITLOS's 2024 advisory opinion holds that anthropogenic greenhouse gas emissions into the atmosphere constitute pollution of the marine environment within the meaning of Article 1(1)(4), and that Article 194(1) imposes a stringent due-diligence obligation to prevent, reduce and control that pollution. This allows climate-related marine harm to be framed not merely as a policy problem but as conduct subject to binding international obligations.¹⁹

The territorial consequence, however, is distinct. Maritime zones are measured from baselines, and changing coastal geography can produce uncertainty about the future extent of the territorial sea, EEZ and continental shelf. The 2025 ILC report records widespread State support for preserving established baselines and maritime entitlements despite sea-level rise. This emerging position responds to legal stability, but it still needs institutional consolidation and a clear relation to future delimitation agreements. The proposed Protocol therefore treats preservation of established entitlements as a continuity rule rather than as an invitation to extend maritime claims.²⁰

ARSIWA as the Remedial Backbone: ARSIWA is the logical remedial backbone because it already contains a vocabulary for attribution, breach, continuing wrongful acts, composite acts, invocation of responsibility and reparation. Articles 31 and 34-37 allow a broad remedial conception, while Article 47 accommodates situations involving several responsible States. Article 48 also permits certain non-injured States to invoke responsibility where the obligation protects a collective interest or the international community as a whole. These provisions are valuable because they prevent the climate regime from being understood as the only relevant source of law.²¹ ARSIWA nevertheless operates as a framework of general principles rather than a specialised claims system. It does not appoint a standing scientific panel, prescribe a climate attribution formula, create an automatic fund, or allocate jurisdiction to a dedicated tribunal. The proposed Protocol would therefore not replace ARSIWA. Instead, it would

¹⁹ ITLOS COSIS AO (n 4) paras 179, 441; UNCLOS (n 1) arts 192, 194, 235.

²⁰ ILC Final Report (n 1); Pacific Islands Forum, 'Declaration on Preserving Maritime Zones in the Face of Climate Change-related Sea-Level Rise' (6 August 2021); Pacific Islands Forum, 'Declaration on the Continuity of Statehood and the Protection of Persons in the Face of Climate Change-Related Sea-Level Rise' (9 November 2023) ('PIF 2023 Declaration').

²¹ ARSIWA (n 2) arts 14-15, 31, 34-37, 42, 47-48, and commentary to art 48.

specify how ARSIWA principles should be operationalised when the injury is climate-induced territorial loss, while preserving the ordinary rules for disputes outside its scope.²²

Human Rights and Climate Mobility: Human-rights law adds a second layer of protection. In *Teitiota*, the Human Rights Committee recognised that climate change and associated environmental degradation can threaten the right to life in ways relevant to non-refoulement, even though the claim before it did not establish a violation on the facts. In *Daniel Billy*, the Committee found that Australia's failure to take timely and adequate adaptation measures to protect Torres Strait Islanders violated their rights to private life, family and home and to enjoy their minority culture; it found no violation of the right to life, but required Australia to provide an effective remedy. The ECtHR in *KlimaSeniorinnen* likewise held that Switzerland's inadequate climate protection violated the right to respect for private and family life under Article 8, recognised the standing of the applicant association (while denying victim status to the individual applicants), and found a violation of Article 6(1) because the domestic courts had not engaged seriously with the association's claim. These authorities show that climate harm can produce legally cognisable individual and collective injuries, but they do not create an inter-State territorial compensation regime.²³

Climate mobility exposes an additional gap. Persons displaced because land becomes unsafe or permanently uninhabitable do not necessarily meet the Refugee Convention's persecution-based definition. A separate protocol can therefore complement, rather than displace, refugee law by providing temporary protection, planned relocation, family unity, documentation, non-discrimination and pathways to durable status where return becomes unsafe. The 2025 ILC work similarly treats protection of persons as interconnected with statehood and sea-level rise.²⁴

²² On the status of the proposed Protocol, see n 5.

²³ *Ioane Teitiota v New Zealand* (Views adopted 24 October 2019) UN Doc CCPR/C/127/D/2728/2016, paras 9.4-9.13; *Daniel Billy and Others v Australia* (Views adopted 21 July 2022) UN Doc CCPR/C/135/D/3624/2019; *Verein KlimaSeniorinnen Schweiz and Others v Switzerland* App no 53600/20 (ECtHR [GC], 9 April 2024).

²⁴ Convention relating to the Status of Refugees (adopted 28 July 1951, entered into force 22 April 1954) 189 UNTS 137, art 1A(2) ('Refugee Convention'); UNHCR, 'Legal considerations regarding claims for international protection made in the context of the adverse effects of climate change and disasters' (1 October 2020); ILC Final Report (n 1).

PRINCIPAL PRECEDENTS AND WHAT THEY ESTABLISH

Trail Smelter: The no-harm Principle: Trail Smelter remains the foundational transboundary environmental authority because it linked territorial sovereignty with a duty to prevent serious injury to another State. The award is relevant to climate change as a principle of prevention, but its limitations are equally important: the case involved a geographically identifiable industrial source and comparatively traceable damage. Climate-induced territorial loss is diffuse and cumulative. Trail Smelter therefore supports the existence of a preventive principle but does not answer questions of apportionment or mass attribution.²⁵

Pulp Mills: Procedural Duties can be Independently Enforceable: Pulp Mills demonstrates why procedural obligations matter in climate disputes. The ICJ treated environmental impact assessment, notification, consultation and cooperation as legal obligations where significant transboundary risk exists. The lesson for climate loss is that a claimant may be able to establish wrongful conduct before proving the final extent of territorial damage. A failure to assess, notify or consult on serious environmental risk can therefore be wrongful in its own right: in Pulp Mills the Court found Uruguay in breach of its procedural obligations and held that this declaration constituted appropriate satisfaction, even though no breach of the substantive obligations, and no compensable damage, had been established.²⁶

Costa Rica-Nicaragua: Environmental damage can be valued: The Costa Rica-Nicaragua compensation judgment shows that international law can award compensation for environmental damage and restoration even though ecological assets do not have ordinary market prices. The Court held that damage to the environment, and the consequent impairment or loss of environmental goods and services, is compensable in itself, together with restoration costs; declining to adopt either party's methodology exclusively, it made an overall assessment of the loss. This is important for climate-induced territorial loss because a future claims mechanism cannot limit compensation to conventional real-estate value. It must be able to value wetlands, fisheries, protective ecosystems, cultural landscapes and reasonable adaptation or relocation costs. The precedent supports valuation capacity, but it does not supply a formula for allocating cumulative climate responsibility among States.²⁷

²⁵ *Trail Smelter (United States v Canada)* (1938 and 1941) 3 RIAA 1905, 1965.

²⁶ *Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Judgment) [2010] ICJ Rep 14, paras 101, 204-205, 269.

²⁷ *Certain Activities (Compensation)* (n 13) paras 41-43, 52.

ITLOS 2011 and ITLOS 2024: Due Diligence and Climate-specific Marine duties: The 2011 Seabed Disputes Chamber advisory opinion and the 2024 COSIS advisory opinion demonstrate an increasingly demanding model of due diligence. The sponsoring-State opinion required legislation, administrative measures and oversight, while the 2024 opinion characterises anthropogenic greenhouse gas emissions as marine pollution and requires a stringent standard of due diligence informed by the best available science, precaution and cooperation. The cumulative effect is doctrinally significant: due diligence is a substantive legal obligation capable of evolving with scientific knowledge, not merely a general aspiration.²⁸

Teitiota and Daniel Billy: The human consequences of climate injury: The Human Rights Committee's climate decisions show two complementary points. First, climate-induced conditions can engage the right to life and may become relevant to non-refoulement where environmental conditions pose serious threats. Secondly, a failure to adopt timely adaptation measures can violate the rights to private life, family and home and to minority culture. These authorities support a human-centred component of the proposed Protocol, particularly for mobility and cultural continuity. They do not, however, convert human-rights bodies into forums for allocating inter-State territorial loss.²⁹

Urgenda and KlimaSeniorinnen: Enforcement can require institutional action: Urgenda illustrates that domestic courts can translate climate protection duties into enforceable orders directed at State conduct. KlimaSeniorinnen demonstrates that a regional human-rights court can scrutinise structural failures and address standing through an association where climate risk affects the rights protected by the Convention. Neither case establishes an international compensation scheme, but both demonstrate a practical point relevant to treaty design: general obligations become more effective when the legal system identifies who can bring a claim, what standard the respondent must meet, what evidence is relevant and what remedial consequences follow.³⁰

²⁸ *Responsibilities and Obligations of States with respect to Activities in the Area* (Advisory Opinion, 1 February 2011) ITLOS Reports 2011, 10, paras 110-120; ITLOS COSIS AO (n 4) paras 179, 441.

²⁹ *Teitiota* (n 23) paras 9.4-9.13; *Daniel Billy* (n 23).

³⁰ *State of the Netherlands v Urgenda Foundation* ECLI:NL:HR:2019:2007 (Supreme Court of the Netherlands, 20 December 2019); *KlimaSeniorinnen* (n 23). Both are domestic or regional enforcement analogies, not direct precedents for inter-State compensation.

The ICJ Advisory Opinion of 23 July 2025: The 2025 ICJ opinion is the central contemporary authority. It recognises the climate system as an object of protection under a broad range of international obligations and explains that wrongful climate conduct can trigger the ordinary legal consequences of State responsibility. Most importantly for this paper, the Court addresses the relationship between the Paris Agreement and general responsibility. Neither the Article 8 loss-and-damage provisions nor the Article 15 compliance mechanism reveals an intention to exclude the customary rules of State responsibility. The Court therefore confirms both sides of the argument advanced here: climate responsibility exists in international law, but the institutional architecture remains incomplete.³¹

The Court's reasoning on causation is equally important. It treats climate causation as a scientific and legal problem rather than as a reason to presume liability or to demand impossible monocausal proof. Multiple contributing actors can be accommodated; the relevant question is whether the causal nexus is sufficiently direct and certain for the remedy sought. This permits a calibrated system in which different evidentiary thresholds produce different remedies. It also supports the proposal that a permanent scientific panel can reduce repeated litigation over the same background scientific questions.³²

The 2025 ILC work on Sea-level rise: The ILC's 2025 final report is significant even though it is not a treaty and should not be treated as though it automatically created new customary law. It records widespread support for preserving established baselines and outer limits of maritime zones notwithstanding sea-level rise, and strong support for continuity of statehood and international legal personality of States particularly affected by sea-level rise. It also recognises the interdependence of law of the sea, statehood and protection of persons. These conclusions supply an important normative foundation for a treaty that protects legal continuity while leaving questions of responsibility and compensation to separate procedures.³³

WHY THE EXISTING SYSTEM STILL DOES NOT SOLVE TERRITORIAL LOSS?

There is no complete cause-of-action and remedy package: A State facing territorial loss may need five legal outcomes at once: prevention of further harm; funding for immediate adaptation or protection; adjudication of responsibility where unlawful conduct is established; preservation of statehood and maritime rights; and protection of displaced people. Existing

³¹ ICJ Climate AO 2025 (n 3) paras 405-420.

³² Ibid paras 430-438.

³³ ILC Final Report (n 1).

instruments address these needs in different places, through different standards and with different forms of jurisdiction. The law is therefore substantial but fragmented. The practical question is not whether each rule exists; it is whether an affected State can move from a scientifically established injury to a legally enforceable remedy without rebuilding the case architecture from scratch.³⁴

Cumulative causation lacks a common methodology: The present system leaves too much methodological variation. One forum may emphasise direct causal nexus; another may focus on due diligence; another on human-rights risk; a climate fund may use vulnerability criteria rather than responsibility. That diversity is not inherently wrong, but the absence of a recognised methodology creates uncertainty about the evidentiary threshold for responsibility-based claims. A treaty can reduce this problem by establishing a common scientific baseline and requiring tribunals to state separately what is established by science, what is established as breach, and what is the legal basis for allocating the remedy.³⁵

Loss-and-damage finance is not responsibility-based reparation: The Fund for Responding to Loss and Damage is an important financial institution, but it is not a responsibility tribunal. Its purpose is to support particularly vulnerable developing countries facing economic and non-economic loss and damage, and its funding arrangements are expressly not framed as liability or compensation. This distinction is legally useful. It allows immediate support without requiring a State to prove another State's wrongful conduct. It also means, however, that the Fund cannot answer the separate question of whether a particular respondent breached an international obligation and what reparation follows.³⁶

The Paris Compliance Mechanism cannot supply the Missing Judicial Function: The PAICC's facilitative design is rational for a consensus-based climate treaty. A non-adversarial compliance committee can help Parties prepare action plans, improve reporting and understand their obligations. It is not designed to conduct mass evidence on a territorial injury, hear competing causal experts, award compensation or decide the legal responsibility of a

³⁴ ICJ Climate AO 2025 (n 3) paras 405-455.

³⁵ Compare ICJ Climate AO 2025 (n 3) paras 436-438 (causal nexus assessed in concreto), ITLOS COSIS AO (n 4) (due diligence) and *KlimaSeniorinnen* (n 23) (human-rights risk).

³⁶ Decisions 2/CP.27 and 2/CMA.4 (2022) paras 1-3; Decisions 1/CP.28 and 5/CMA.5, 'Operationalization of the new funding arrangements, including a fund, for responding to loss and damage referred to in paragraphs 2-3 of decisions 2/CP.27 and 2/CMA.4', UN Doc FCCC/CP/2023/11/Add.1, preamble (recording that the arrangements are based on cooperation and facilitation and do not involve liability or compensation) ('Loss and Damage Fund decisions').

respondent. Strengthening compliance within the existing framework is therefore necessary but insufficient. The proposal uses the PAICC as a comparator: compliance and claims should remain institutionally distinct.³⁷

Statehood and Maritime Stability require an Express Rule: The emerging position in the ILC and Pacific practice points toward continuity, but affected States should not be required to relitigate their existence every time physical geography changes. International legal personality is a matter of legal continuity as much as physical territory. A treaty can make that principle explicit: climate-induced loss of habitable land does not, by itself, terminate statehood, membership in international organisations, nationality, or pre-existing maritime entitlements. This does not settle every question of recognition or delimitation, but it removes the most destabilising presumption - that physical disappearance automatically entails legal disappearance.³⁸

Mobility needs a legal bridge: A State may preserve its legal personality while its people are dispersed across borders. The two questions are related but not identical. Existing refugee law is not a comprehensive climate-mobility regime, and human-rights bodies are case-specific. A durable legal response should therefore create complementary status categories for temporary evacuation, planned relocation, permanent uninhabitability and statelessness risk. The objective should be continuity of rights rather than a binary choice between remaining in place and claiming refugee status.³⁹

PROPOSED LEGAL SOLUTION: THE CLIMATE TERRITORIAL LOSS PROTOCOL

The proposed Climate Territorial Loss Protocol (CTLP) should be adopted as a stand-alone supplementary treaty open to all States, rather than as an amendment that attempts to rewrite the UNFCCC, Paris Agreement or UNCLOS. Its legal purpose would be to operationalise existing obligations for one narrow category of injury: climate-induced substantial loss of territory or habitability. The Protocol would supplement ARSIWA, preserve the rights and obligations arising under existing treaties, and create consent-based jurisdiction only for Parties that ratify it. This structure is important because it avoids pretending that a new institution can

³⁷ Paris Agreement (n 15) art 15(2); Decision 20/CMA.1 (n 15).

³⁸ ILC Final Report (n 1); PIF 2023 Declaration (n 20).

³⁹ Refugee Convention (n 24) art 1A(2); *Teitiota* (n 23).

be imposed on non-parties while still allowing an initial coalition of affected and contributing States to create a functioning regime.⁴⁰

Article 1 - Purpose and Scope: The Protocol should apply where a State demonstrates that climate change has caused or materially contributed to substantial physical loss, permanent uninhabitability, or severe degradation of territory, critical coastal ecosystems or infrastructure necessary for territorial habitability. The threshold should be deliberately higher than ordinary climate damage. Routine storms or economic losses alone should remain within existing finance and liability systems unless they form part of a demonstrable territorial-loss process. The higher threshold prevents the Protocol from becoming an all-purpose climate court and concentrates its institutional resources on the most legally disruptive injuries.

Article 2 - Definitions and Trigger Stages: The Protocol should define ‘climate-induced territorial loss’ using functional criteria rather than a single percentage of land area. Trigger categories could include: permanent physical submergence; chronic inundation that removes ordinary habitation; loss of critical freshwater or protective ecosystems that makes a defined area non-habitable; recurrent glacier-collapse, glacial-lake-outburst or permafrost-driven mass movements that remove or bury habitable land in mountain States; or a verified governmental declaration that a territory has crossed a sustained habitability threshold. The scientific determination should be reviewable, but the legal consequence should not depend on waiting until the last square metre disappears. Early activation is necessary because adaptation and relocation become more expensive as options narrow.

Article 3 - International Climate Attribution Panel: A standing International Climate Attribution Panel (ICAP) should provide expert reports on four matters: the observed physical change; the contribution of anthropogenic climate change to that change; the contribution of the respondent State’s conduct to the relevant climate risk; and uncertainty ranges. The Panel should operate like a technical evidence body rather than a court. Tribunals would retain the authority to decide breach, causation in law and reparation. The point is procedural economy: the same scientific issues should not be litigated from first principles in every case.⁴¹

The Panel should also publish common methodologies for historical emissions, current emissions, event attribution, sea-level rise, subsidence, adaptation costs and non-market

⁴⁰ Vienna Convention on the Law of Treaties (adopted 23 May 1969, entered into force 27 January 1980) 1155 UNTS 331, arts 26, 34 (‘VCLT’); ARSIWA (n 2) arts 55-56; see also n 5.

⁴¹ Compare the ICJ’s treatment of competing expert evidence in *Pulp Mills* (n 26) paras 165-168.

environmental loss. A methodology should be updated periodically but not retroactively in a manner that changes a concluded award. This would create scientific consistency without converting science into an automatic legal liability formula. The distinction between scientific contribution and legal responsibility must remain explicit.⁴²

Article 4 - A Two-track Financial Architecture: The central design should separate solidarity finance from responsibility-based reparation. Track A would provide rapid, no-fault funding for urgent protective works, relocation planning, disaster response and preservation of essential public functions. Eligibility would be based on vulnerability and verified climate-related injury, not a finding of State wrongfulness. Track B would provide responsibility-based reparation where a claims chamber determines that a respondent breached an applicable international obligation and that the required causal nexus exists. Track B could reimburse reasonable adaptation or relocation expenditure, environmental restoration, economic loss and other legally compensable damage without making the existence of a finance entitlement depend on proof of fault.⁴³

Funding for Track A should come from assessed contributions by Parties calculated through a treaty formula. The author's proposed formula would combine historical and current greenhouse gas contributions with capacity to pay, while also considering the vulnerability of affected States. This is a normative design choice, not existing law. Its purpose is to avoid treating the finance pool as charitable discretion while also avoiding a simplistic historical-emissions-only rule that could make participation politically and financially unstable. The formula should be reviewed every five years by the Parties on the basis of transparent scientific and economic data.⁴⁴

Track B should avoid double recovery. If a claimant receives rapid finance for a category of loss and later secures a responsibility-based award for the same loss, the later award should credit the earlier payment. Conversely, an award for legally compensable responsibility-based harm should not extinguish unrelated entitlements under the climate-finance mechanism. The distinction should be written into the Protocol and reflected in the claims rules.⁴⁵

⁴² The Panel's methodologies would be evidentiary rather than dispositive; the legal causal nexus remains for the tribunal: ICJ Climate AO 2025 (n 3) paras 436-438.

⁴³ Loss and Damage Fund decisions (n 36).

⁴⁴ The contribution formula is intentionally proposed rather than descriptive of existing law; adoption would require treaty consent and technical negotiation.

⁴⁵ ARSIWA (n 2) art 47(2)(a) and commentary.

Article 5 - Climate Territorial Loss Claims Chamber: The Protocol should establish a small standing Claims Chamber with jurisdiction over disputes between Parties concerning the interpretation or application of the Protocol and responsibility-based claims falling within its scope. Ratification should constitute advance consent to the Chamber's jurisdiction for Protocol disputes. The Chamber should be empowered to order provisional measures, require scientific disclosure, receive ICAP reports, determine breach and causation, quantify reparation, and issue binding awards. It could permit States to seek urgent interim relief before permanent territorial loss occurs.⁴⁶ The Chamber should apply the ordinary law of State responsibility unless the Protocol expressly provides otherwise. The claimant would therefore still need to establish an applicable primary obligation, attributable conduct, breach and the required causal nexus for the remedy sought. The Protocol's innovation would be evidentiary and procedural rather than a blanket creation of strict liability. Where a strict or no-fault obligation is expressly created by the Protocol for a defined class of conduct, the Chamber would apply that rule as a matter of treaty law.⁴⁷

Article 6 - A Montreal Protocol-style Compliance Mechanism: Alongside the Claims Chamber, the Protocol should establish a Compliance Committee modelled on the Montreal Protocol's Implementation Committee. Parties, and in narrowly defined circumstances the Secretariat, could submit information about possible non-compliance. The Committee would verify information, invite the respondent's reply, identify systemic problems, and recommend a compliance plan, technical assistance or financial support. The Meeting of Parties would have authority to adopt binding procedural directions authorised by the Protocol and to escalate persistent non-compliance to the treaty's political body. The mechanism should be facilitative in ordinary implementation cases but capable of escalating repeated failures where a State ignores an adopted compliance plan.⁴⁸ The compliance mechanism and Claims Chamber should remain separate. A compliance proceeding asks whether a Party is implementing the Protocol; a claim proceeding asks whether a legal injury has occurred and what remedy follows. The Montreal model demonstrates that institutional separation can make compliance less politically confrontational while leaving judicial or arbitral dispute settlement available for

⁴⁶ UNCLOS (n 1) arts 286-288, 290, which provide the comparative model for advance consent to compulsory settlement and provisional measures.

⁴⁷ ARSIWA (n 2) arts 55-56.

⁴⁸ Montreal Protocol on Substances that Deplete the Ozone Layer (adopted 16 September 1987, entered into force 1 January 1989) 1522 UNTS 3, art 8 ('Montreal Protocol'); Decision IV/5 (1992) annex IV, as revised by Decision X/10 (1998) annex II ('Non-compliance procedure').

disputes that require adjudication. This separation is one of the principal safeguards against overloading a single institution with incompatible functions.⁴⁹

Article 7 - Statehood, Maritime Entitlements and Continuity: The Protocol should contain an express continuity clause: climate-induced physical loss or uninhabitability does not, by itself, terminate the international legal personality or sovereignty of a Party. Established baselines and outer limits of maritime zones, once lawfully established and deposited, would remain legally preserved notwithstanding climate-related sea-level rise, subject to the rights of Parties under existing delimitation agreements and UNCLOS. The provision would codify the direction of recent State practice and the ILC's 2025 conclusions without purporting to amend UNCLOS by implication.⁵⁰ The clause should also preserve nationality, treaty rights and membership in international organisations, and permit a climate-affected State to maintain governmental institutions from a relocated territory. This would turn continuity from a diplomatic argument into an operational treaty rule. It would not resolve every question of recognition where a State ceases to control any land, but it would establish a strong legal presumption that physical change caused by climate change does not produce automatic legal extinction.⁵¹

Article 8 - Climate Mobility and Cultural Continuity: A companion chapter should provide minimum standards for persons who cannot safely remain affected or whose communities must relocate. The Protocol should require non-refoulement where return would expose persons to serious threats, provide temporary protected status for sudden displacement, establish planned-relocation pathways for slow-onset loss, recognise family unity and documentation, and protect access to basic social and economic rights. Collective rights should be included so that relocation does not automatically dissolve linguistic, cultural and community institutions.⁵² The mobility rules should operate without converting all climate displacement into a refugee category. The purpose is complementary protection. Refugee law remains available where its elements are met; human-rights law continues to apply; the Protocol adds a tailored status where climate-induced loss makes return or continued residence impossible. This is

⁴⁹ Ibid.

⁵⁰ ILC Final Report (n 1).

⁵¹ Ibid; PIF 2023 Declaration (n 20).

⁵² *Teitiota* (n 23) paras 9.4-9.13; Refugee Convention (n 24) art 33; *Climate Emergency and Human Rights* (Advisory Opinion OC-32/25, Inter-American Court of Human Rights, 29 May 2025).

particularly important for small island communities because a State may remain legally continuous while its population becomes increasingly mobile.⁵³

PRECEDENTS DEMONSTRATING THAT THE PROPOSED MECHANISM IS INSTITUTIONALLY FEASIBLE

The proposed Protocol is not without precedent in institutional design. No existing regime creates a complete analogue for climate-induced territorial loss, and it would be misleading to suggest otherwise. The value of comparative precedent is narrower: different international regimes have already solved component problems that the Protocol would combine - tiered compensation, scientific claims assessment, non-compliance procedures, compulsory dispute settlement and continuity protections. These examples demonstrate that the proposed machinery is not institutionally unprecedented even though the injury is new.

The 1992 CLC and IOPC Funds: strict liability plus pooled compensation: The international oil-pollution regime separates primary liability, insurance and supplementary compensation. The 1992 Civil Liability Convention places liability for covered tanker pollution on the shipowner, while the 1992 Fund Convention creates a collective compensation mechanism when shipowner compensation is unavailable or inadequate. The Supplementary Fund then adds another tier for Parties that join the Protocol. This architecture is relevant because it shows how an international regime can distinguish the question ‘who is liable for the incident?’ from the question ‘how should adequate compensation be financed when first-tier liability is insufficient?’.⁵⁴ The IOPC Funds also maintain a detailed claims process with technical experts and, for large incidents, local claims offices. This directly supports the proposed combination of a scientific evidence body and a financial pool. The analogy should not be overstated: oil spills are point-source events with identifiable shipowners, whereas climate change is cumulative and multi-source. The precedent therefore supports the institutional architecture, not the substantive liability standard.⁵⁵

⁵³ Refugee Convention (n 24) art 1A(2); *Teitiota* (n 23).

⁵⁴ Protocol of 1992 to amend the International Convention on Civil Liability for Oil Pollution Damage, 1969 (adopted 27 November 1992, entered into force 30 May 1996) 1956 UNTS 255 (‘1992 CLC’); Protocol of 1992 to amend the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 (adopted 27 November 1992, entered into force 30 May 1996) 1953 UNTS 330 (‘1992 Fund Convention’); Protocol of 2003 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 (adopted 16 May 2003, entered into force 3 March 2005) (‘Supplementary Fund Protocol’).

⁵⁵ International Oil Pollution Compensation Funds, *Claims Manual* (IOPC Funds, 2019 edn).

The Montreal Protocol: compliance without turning every dispute into litigation: The Montreal Protocol's non-compliance procedure demonstrates that treaty compliance can be organised as an ongoing institutional process. Submissions are examined by an Implementation Committee composed of ten Parties; the respondent has an opportunity to reply; the committee can seek additional information; and the Meeting of the Parties can call for steps to achieve full compliance, including assistance. The procedure is distinct from formal dispute settlement. For the CTLP, this model would permit routine monitoring and corrective action without requiring a State to file a contentious claim every time a reporting or mitigation obligation is missed.⁵⁶ Its most useful lesson is design discipline. Compliance should be transparent, rules-based and capable of escalating repeated failures, but it should not be expected to calculate tort-style compensation. Keeping that function separate from the Claims Chamber would make the proposed regime administratively workable and politically more acceptable.⁵⁷

The UN Compensation Commission: mass claims and expert valuation: The UN Compensation Commission is a sui generis example of what happens when a large number of claims arise from conduct with a common factual background. It received approximately 2.69 million claims and awarded about US\$52.4 billion. Its procedures used panels, experts, documentary evidence, sampling and statistical methods to process different categories of loss. The Commission was created by the Security Council after Iraq invaded Kuwait and should not be treated as a general precedent for climate responsibility. Its relevance is narrower but powerful: complex, multi-claim environmental and economic losses can be processed through a centralised international claims institution if the mandate, funding and evidentiary rules are defined in advance.⁵⁸ For climate territorial loss, such a mechanism could be particularly valuable where relocation, ecosystem restoration and infrastructure costs generate large volumes of evidence. A standing institution would also allow methodologies to mature over time instead of forcing each dispute to invent its own valuation framework.

UNCLOS dispute settlement and the value of advance consent: UNCLOS demonstrates another institutional principle: States can consent in advance to compulsory procedures for disputes concerning the interpretation and application of a treaty, subject to specified exceptions. ITLOS and Annex VII arbitration show that technical international disputes can be

⁵⁶ Montreal Protocol (n 48) art 8; Non-compliance procedure (n 48); Decision IV/5 (1992) annex V (indicative list of measures).

⁵⁷ Ibid.

⁵⁸ UNSC Res 687 (3 April 1991) UN Doc S/RES/687, paras 16-19; UNSC Res 692 (20 May 1991) UN Doc S/RES/692; United Nations Compensation Commission, 'The Claims'.

separated into legal questions, evidence, provisional measures and final awards. The CTLP would use the same general logic but apply it to a much narrower category of climate injury. The central advantage is predictability. A claimant would know, before an injury becomes irreversible, which institution has jurisdiction and what procedural rules apply.⁵⁹

Domestic and regional climate adjudication as enforcement analogies: Urgenda and KlimaSeniorinnen demonstrate that climate obligations become more effective when standing, evidence and remedies are defined by law. A domestic or regional court can require a government to meet a legally reviewable standard without itself becoming a climate regulator. The CTLP can adapt that logic at the inter-State level: it should review whether a State complied with its international obligations and should order legally recognised remedies, while leaving policy implementation choices principally to the respondent State. The role of the tribunal is legality and remedy, not substitution of governmental policy preferences.

HOW THE PROPOSED PROTOCOL WOULD OPERATE IN PRACTICAL CASES?

A disappearing small-island State: Assume a low-lying island State establishes that a substantial part of an inhabited atoll has crossed the Protocol's habitability threshold. Under the proposed system, the ICAP would first quantify the physical change, the contribution of anthropogenic warming, and the contribution range attributable to relevant State conduct. Track A finance could then fund protective works, freshwater systems, relocation planning and continuity of governmental institutions without waiting for a finding of wrongfulness. At the same time, the State could commence Track B proceedings against one or more respondents whose mitigation or prevention obligations are alleged to have been breached. The Claims Chamber would then separate the issues. It would determine whether the respondent breached a primary obligation; whether there is a sufficiently direct and certain causal nexus for the categories of loss claimed; and what remedy is legally attributable to that breach. Statehood and maritime entitlements would not depend on the outcome of the monetary claim. Even if the causal evidence was insufficient for full compensation, the continuity provisions would operate independently. The regime therefore prevents one evidentiary dispute from threatening the claimant's legal existence.

A delta State with severe coastal degradation: A heavily exposed delta State may not lose sovereignty over large areas immediately, but coastal erosion, salinisation and repeated

⁵⁹ UNCLOS (n 1) Part XV, arts 286-298 and annex VII.

inundation can undermine habitation and ecosystems. Here the Protocol would be triggered by a verified cumulative process rather than complete physical disappearance. The scientific panel could distinguish climate-driven sea-level rise from local subsidence and other contributors. Responsibility-based claims could then target proven breaches in mitigation, marine protection or due diligence, while adaptation finance continues through Track A. This approach is more realistic than forcing the claimant to prove that one foreign State directly caused one specific episode of shoreline retreat.

A coastal State facing maritime uncertainty: A State whose baselines are affected by sea-level rise may prioritise legal stability rather than compensation. The continuity chapter would preserve established entitlements, subject to existing delimitation agreements and UNCLOS. The State could then bring any remaining legal dispute through the Protocol or existing law of the sea mechanisms. This solves a different problem from compensation: it prevents climate-driven geography from producing an automatic contraction of legal rights. The two forms of protection should remain conceptually separate.

A relocated population: Where continued residence is unsafe, the mobility chapter would permit planned relocation before complete environmental collapse. The originating State would retain nationality and governmental continuity; receiving States that are Parties would provide an agreed legal status, documentation, family unity and access to basic rights. The Protocol could finance relocation through Track A while leaving responsibility-based claims available where unlawful conduct is later established. This sequencing matters because legal protection should not depend on proving fault before people are moved to safety.

A mountain State: the 2026 Bhotekoshi-Trishuli disaster in Nepal: The scenarios above are hypothetical. The most recent real-world instance of climate-linked loss of land did not occur on a low-lying coast but in the Himalaya. On the morning of 26 August 2026, a large mass of glacier ice and rock detached from a high-altitude slope near the Nepal-China border and fell into the valley below. The resulting debris flow and flash flood struck both sides of the border at the Gyirong-Rasuwadadhi crossing and then swept down the Bhotekoshi-Trishuli river system through Nepal's Rasuwa and Nuwakot districts.⁶⁰ Seismometers recorded the collapse

⁶⁰ 'What caused Nepal flood? Scientist says it was enormous landslide, glacier fall' ABC News (August 2026) <<https://abcnews.com/International/deadly-nepal-flood-caused-enormous-landslide-glacier-tumble/story?id=135984405>> accessed 26 September 2026; Ava Berger, Diaa Hadid and Julia Simon, 'A melting glacier contributed to the deadly Nepal floods. We can expect more like this' NPR (28 August 2026)

as a magnitude 5.2 event, but analysis of the signal showed that it was generated by the mass movement itself rather than by a tectonic earthquake.⁶¹ The event did not merely flood land temporarily. The slope failure removed a substantial block of mountainside; the debris blocked drainage and formed new barrier lakes that threatened further outbursts; and the flow destroyed roads, bridges, hydropower installations, the border crossing and even the offices of the local governments that would ordinarily lead the relief effort.⁶²

On 24 September 2026, Prime Minister Balendra Shah placed the disaster before the United Nations General Assembly at its 81st session. He reported at least 1,400 confirmed deaths and more than 6,000 people missing, and estimated physical recovery needs at about ten per cent of Nepal's GDP. He attributed the disaster to a warming climate that is destabilising the Himalayan environment, explaining that melting permafrost is fracturing the slopes beneath glaciers and increasing the risk of ice-rock avalanches, floods and landslides. He emphasised that Nepal contributes less than 0.1 per cent of global greenhouse gas emissions yet must borrow to repair damage it did not cause, invoked the principle of common but differentiated responsibilities and respective capabilities, described the Loss and Damage Fund and the Global Environment Facility as grossly inadequate, and proposed a Himalayan Climate Resilience Mechanism, led by Nepal, India and China, to share satellite data, monitor dangerous glacial lakes and strengthen joint early-warning systems.⁶³

Two features of the address are legally significant for this paper. First, the Prime Minister organised Nepal's claims around two triads: 'Relief. Rehabilitation. Reconstruction.' as the needs that follow a disaster, and 'Responsibility. Reparation. Resilience.' as the conditions for ensuring that disaster does not become permanent. That is, in substance, the distinction this paper draws between solidarity finance and responsibility-based reparation. Secondly, the same address insisted that Nepal was not present to blame any country or to turn climate change into

<<https://www.npr.org/2026/08/28/nx-s1-5945799/nepal-floods-climate-change-himalayas>> accessed 26 September 2026.

⁶¹ US Geological Survey, 'M 5.2 Landslide - 55 km NW of Kodari, Nepal' (ANSS Comprehensive Catalog, 26 August 2026) <<https://earthquake.usgs.gov/earthquakes/eventpage/us7000tbwb>> accessed 26 September 2026.

⁶² Sarah Shamim, 'Why Nepal faces another flood threat from a new lake on China border' Al Jazeera (28 August 2026) <<https://www.aljazeera.com/news/2026/8/28/is-nepal-facing-another-devastating-flood-from-a-new-lake>> accessed 26 September 2026; 'Floods wipe out local governments' ability to lead rescue, relief' The Kathmandu Post (Kathmandu, 29 August 2026) <<https://kathmandupost.com/national/2026/08/29/floods-wipe-out-local-governments-ability-to-lead-rescue-relief>> accessed 26 September 2026; ABC News (n 66).

⁶³ Government of Nepal, Ministry of Foreign Affairs, 'Address by the Rt Hon Prime Minister Mr Balendra Shah to the 81st Session of the United Nations General Assembly' (New York, 24 September 2026) <<https://mofa.gov.np/content/1890/address-by-the-rt-hon--prime-minister/>> accessed 26 September 2026 ('Shah UNGA Address'); UN News, 'Nepal PM urges climate justice after "Himalayan tsunami" devastates country' (25 September 2026) <<https://news.un.org/en/story/2026/09/1168441>> accessed 26 September 2026.

a geopolitical contest.⁶⁴ A head of government can therefore invoke the vocabulary of responsibility and reparation in the General Assembly while declining, for sound diplomatic reasons, to identify any respondent. This is precisely the situation in which an ad hoc inter-State claim is unlikely ever to be filed, and in which advance consent through ratification of a standing instrument becomes decisive.

The causal link between the disaster and climate change is real but must be stated with care. High-mountain permafrost and ice bind steep rock slopes together; as they warm, slopes lose cohesion and glacier and rock-slope failures become more likely. Scientists commenting on the event described the region's glaciers as increasingly unstable because of human-caused warming and placed the collapse within a wider trend of more frequent cryospheric hazards across the Hindu Kush Himalaya. That trend has a documented basis. The region is warming faster than the global average, and the regional scientific assessment coordinated by ICIMOD projected that about one-third of the region's glacier volume would be lost by 2100 even if global warming were held to 1.5°C, rising to about two-thirds under high-emission pathways.⁶⁵

The same corridor had already been struck in July 2025, when a glacial lake outburst originating in Tibet surged down the Bhotekoshi and swept away the bridge at the Rasuwagadhi crossing, and a joint ICIMOD-UNDP study had identified 47 potentially dangerous glacial lakes across Nepal, India and Tibet, 21 of them in Nepal.⁶⁶ At the same time, some scientists stressed proximate causes such as tectonic uplift, extreme relief and the seismic history of the Langtang area, and declined to attribute the specific collapse to climate change; at the time of writing, no formal event-attribution study had been published.⁶⁷ The evidence therefore supports the proposition that anthropogenic warming increased the probability of this class of event, while leaving uncertain the share of this particular collapse attributable to warming. That

⁶⁴ Five takeaways from Prime Minister Balendra Shah's UN address' The Kathmandu Post (Kathmandu, 25 September 2026) <<https://kathmandupost.com/national/2026/09/25/from-himalayan-tsunami-to-global-reform-five-takeaways-from-balendra-shah-s-un-address>> accessed 26 September 2026.

⁶⁵ Philippus Wester and others (eds), *The Hindu Kush Himalaya Assessment: Mountains, Climate Change, Sustainability and People* (ICIMOD and Springer 2019) chs 3 and 7.

⁶⁶ Gopal Sharma, 'Tibetan glacial lake drainage triggered deadly flood in Nepal, climate body says' Reuters (10 July 2025) <<https://www.reuters.com/sustainability/climate-energy/tibetan-glacial-lake-drainage-triggered-deadly-flood-nepal-climate-body-says-2025-07-10/>> accessed 26 September 2026.

⁶⁷ Maxine Joselow and Leo Sands, 'Climate Change Raises Risk of Disasters Like Nepal Floods' The New York Times (New York, 27 August 2026) <<https://www.nytimes.com/2026/08/27/climate/nepal-flooding-climate-change.html>> accessed 26 September 2026; Donna Lu, 'What caused the catastrophic flood in Nepal and Tibet - and how does a glacier collapse?' The Guardian (London, 27 August 2026) <<https://www.theguardian.com/world/2026/aug/27/what-caused-the-catastrophic-flash-flood-in-nepal-and-tibet-and-how-does-a-glacier-collapse>> accessed 26 September 2026.

is exactly the evidentiary structure anticipated in Section 2.3, and it is why a standing attribution panel is necessary.

The Nepal case also widens the concept of territorial loss used in this paper. The preceding analysis has approached the problem principally through sea-level rise, where the injury is submergence and the legal risk is to baselines and statehood. Nepal is landlocked, and nothing in the 2026 disaster threatens its statehood or its boundaries. What it loses is habitable land: the narrow valley floors, river terraces and transport corridors on which settlement in the high Himalaya depends. Where the same corridor is struck repeatedly, and new barrier lakes and destabilised slopes remain above it, parts of that land may become persistently unsafe to reoccupy. That is a form of the permanent uninhabitability contemplated in Article 1 of the proposed Protocol. For this reason, the trigger categories in Article 2 (Section 6.2) include recurrent cryosphere-driven mass movements in mountain States. A single sudden-onset disaster would not by itself qualify; a demonstrable process of repeated glacier collapse, outburst floods or permafrost-driven slope failure that removes or buries habitable land would.

Could the loss have been avoided if States had complied with their climate obligations? The question must be framed as the law frames it. The 2025 ICJ opinion does not ask whether one State could have prevented a particular avalanche; it asks whether there is a sufficiently direct and certain causal nexus between wrongful conduct and the injury for which reparation is sought. Framed in that way, the answer has two parts. The first concerns mitigation. The Paris Agreement commits Parties to holding warming well below 2°C and pursuing efforts to limit it to 1.5°C, and requires successive nationally determined contributions reflecting each Party's highest possible ambition; the Court confirmed that the 1.5°C threshold has become the primary agreed goal and that the obligations surrounding nationally determined contributions are subject to a stringent standard of due diligence. Had States, and particularly the largest historical and current emitters, pursued emission pathways consistent with those commitments, warming in the Himalaya would have been lower, the degradation of high-altitude permafrost slower, and the probability of events of this kind reduced. It would be unsound to claim that full compliance would certainly have prevented this collapse: part of the warming was already committed, and the tectonic setting would remain. But the law of prevention does not require certainty of avoidance. Due diligence is an obligation of conduct measured against foreseeable risk. The legally relevant proposition is that collective non-compliance materially increased a

foreseeable risk, and that the risk materialised in precisely the kind of harm the obligations were designed to prevent.

The second part concerns cooperation, adaptation and finance, and here the counterfactual is stronger. The UNFCCC obliges Parties to cooperate in preparing for the impacts of climate change and to promote systematic observation of the climate system, and requires developed country Parties to assist particularly vulnerable developing countries in meeting the costs of adaptation; the Paris Agreement identifies systematic observation and early-warning systems as areas for enhanced cooperation and support. The flood early-warning system maintained by Nepali and Chinese scientists was designed principally for monsoon floods and could not detect a high-altitude glacier failure in time; upstream monitoring stations were swept away before alerts could be sent; and commentators described the source area as a monitoring blind spot.⁶⁸ Better-financed transboundary monitoring of high-risk slopes and lakes would not have stopped the collapse, but it could have reduced the loss of life: downstream, a school headteacher evacuated around 900 children minutes before the flood arrived because warnings reached him from upstream.⁶⁹ The disaster also shows the duty to notify another State of an environmental emergency operating in practice: Chinese authorities alerted Nepal on 27 August that a new barrier lake upstream was rising and might breach.⁷⁰ The Himalayan Climate Resilience Mechanism proposed by Nepal would institutionalise this cooperation. Its absence before August 2026 is best understood not as a breach by any single State but as a gap in the implementation of cooperative obligations that already exist.

Applied to these facts, the proposed Protocol would operate in the sequence set out in Section 8.1, but with a different emphasis. The Attribution Panel would first determine the physical

⁶⁸ Leo Sands and Binod Ghimire, 'Speed of Nepal's Flash Floods Likely Overwhelmed Warning System, Experts Say' *The New York Times* (New York, 27 August 2026) <<https://www.nytimes.com/2026/08/27/world/asia/speed-of-flash-floods-likely-overwhelmed-nepals-warning-system-experts-say.html>> accessed 26 September 2026; Dibyesh Anand, 'Nepal floods: China's strict control of Tibet makes it harder to prepare for Himalayan disasters' *The Conversation* (28 August 2026) <<https://theconversation.com/nepal-floods-chinas-strict-control-of-tibet-makes-it-harder-to-prepare-for-himalayan-disasters-290659>> accessed 26 September 2026.

⁶⁹ Harry Cockburn, 'Headteacher saves 900 children from deadly flash flood in Nepal' *The Guardian* (London, 30 August 2026) <<https://www.theguardian.com/world/2026/aug/30/headteacher-saves-children-flash-flood-nepal>> accessed 26 September 2026.

⁷⁰ *Corfu Channel (United Kingdom v Albania)* (Merits) [1949] ICJ Rep 4, 22; Rio Declaration on Environment and Development (14 June 1992) UN Doc A/CONF.151/26 (Vol I) annex I, principle 18; cf Convention on the Law of the Non-navigational Uses of International Watercourses (adopted 21 May 1997, entered into force 17 August 2014) UN Doc A/RES/51/229 annex, art 28, to which neither Nepal nor China is a party; 'New barrier lake in Nepal raises fresh flood threat, China warns' *The Kathmandu Post* (Kathmandu, 27 August 2026) <<https://kathmandupost.com/national/2026/08/27/new-barrier-lake-in-nepal-raises-fresh-flood-threat-china-warns>> accessed 26 September 2026

change and separate the contribution of warming and permafrost degradation from tectonic and topographic factors. Track A would then provide grant-based finance for reconstruction, the relocation of settlements away from the most exposed valley floors, and high-altitude monitoring, without requiring Nepal to prove wrongful conduct by any State. This responds directly to the Prime Minister's complaint that vulnerable countries are forced to borrow and to spend years proving that they need help. Track B would be considerably harder. Nepal would need to identify a respondent Party, establish a breach, and show a sufficient causal nexus between that Party's excess emissions and loss arising from a single mass movement in a tectonically active range. On present science, the most realistic Track B outcome would be declaratory relief, compliance measures and a contribution-scaled share of adaptation and relocation costs, rather than full compensation for every item of loss. That result is not a defect of the design. It demonstrates why the two tracks must be kept separate: if Nepal's access to recovery finance depended on the success of a responsibility claim, it would receive the least when it needs most. The Bhotekoshi-Trishuli disaster therefore strengthens rather than weakens the argument of this paper. It shows that climate-linked loss of land is not confined to small islands and deltas; that the affected State itself regards existing loss-and-damage finance as inadequate and loan-based; that the causal evidence for a single event will usually be probabilistic, which makes a common attribution methodology indispensable; and that an affected State may frame its needs in the language of responsibility and reparation while hesitating to name a respondent, which is the gap that advance consent to a standing claims mechanism is designed to close.

LEGAL OBJECTIONS, LIMITS AND SAFEGUARDS

Sovereignty and consent to Jurisdiction: The strongest objection is consent. States may resist a treaty that appears to expose national climate policy to external adjudication. The answer is not to deny the sovereignty concern but to design around it. The Protocol should require ratification and should make ratification an express advance consent to the Claims Chamber's jurisdiction. Non-parties would not be bound. The treaty could nevertheless create benefits - finance, technical assistance and continuity rules - that provide incentives for participation. The proposal is therefore a treaty mechanism based on consent, not an asserted unilateral jurisdiction over all major emitters.

Scientific uncertainty and the danger of strict global liability: A second objection is that science cannot trace every square metre of land loss to every State. The Protocol should respond

by refusing to require such precision and equally refusing automatic global liability. The ICAP methodology would establish contribution ranges and confidence levels. The Claims Chamber would then apply the legal causation standard appropriate to the remedy sought. Where science can establish only a material contribution to risk, the remedy may be tailored accordingly; where a specific breach produces a clearly quantifiable injury, compensation can be more exact. This calibrated approach preserves causation while recognising cumulative processes.

Equity, capacity and common but differentiated responsibility: A contribution formula must account for distributive concerns. Historical emissions are relevant to equity arguments, while present emissions matter for current risk and current capacity. Developing States may also face weaker institutional capacity to prepare evidence and absorb costs. The proposed finance formula therefore combines contribution and ability-to-pay and includes technical support. This does not convert the principle of common but differentiated responsibilities and respective capabilities into an automatic liability rule; rather, it informs the treaty's design of a collective funding mechanism. The distinction is important because responsibility for wrongful conduct and equitable burden-sharing are not identical questions.

Double recovery and interaction with existing funds: A new Protocol should not create overlapping compensation for the same loss. The answer is a coordination rule requiring claimants to disclose finance received from existing mechanisms and requiring awards to credit prior payments for the same category of damage. The Protocol should also clarify that its Track A finance is supplementary and that its Track B reparation is based on responsibility. This protects respondents from duplicate liability while protecting claimants from being forced to choose between emergency finance and legal accountability.

The problem of non-parties: No treaty can solve a global problem if the major contributors remain entirely outside the regime. The Protocol should therefore distinguish legal effect from strategic effectiveness. Non-parties remain subject to existing international law, including the climate obligations recognised by the ICJ, UNCLOS obligations where applicable and customary duties. They simply would not be subject to the Protocol's new jurisdiction or automatic contribution formula unless they consent. Over time, participation can expand through finance, scientific cooperation, market access conditions and bilateral implementation agreements. The Protocol would thus complement, rather than displace, the general regime.

IF A NEW TREATY IS NOT IMMEDIATELY FEASIBLE: A STAGED ENFORCEMENT MODEL

A treaty-level mechanism may take years to negotiate. The legal response should therefore have an interim track. First, the Conference and Meeting of the Parties could adopt decisions standardising reporting on territorial-risk indicators, displacement planning, maritime-coordinate preservation and climate-loss evidence. Secondly, States could conclude a plurilateral claims agreement among particularly exposed States and willing contributors, using the same scientific panel and arbitration architecture proposed above.

Thirdly, advisory opinions and regional legal instruments can continue to clarify the law while the institutional model develops. The 2024 ITLOS and 2025 ICJ opinions demonstrate that advisory jurisdiction can consolidate legal principles even where contentious jurisdiction is difficult. Future legal work should focus on unresolved questions such as the legal status of relocated States, the evidentiary use of attribution science, and the relationship between climate finance and responsibility-based reparation. These measures would not be substitutes for a claims protocol, but they would reduce the transition cost and develop State practice around the same architecture.

CONCLUSION

The current framework of international law is neither empty nor complete. It contains substantial substantive obligations: prevention of significant transboundary harm, due diligence, marine environmental protection, environmental impact assessment, climate treaty duties, human-rights protection and the ordinary law of State responsibility. Trail Smelter, Pulp Mills, the Costa Rica-Nicaragua compensation litigation, ITLOS's climate jurisprudence, human-rights decisions and the 2025 ICJ advisory opinion demonstrate that climate-related injury can be legally characterised and, in appropriate circumstances, can generate consequences for States.

The gap appears at the point where an irreversible territorial injury must be converted into a coherent legal remedy. Existing institutions treat different parts of the problem separately. Climate finance supports vulnerable States without determining legal responsibility; the PAICC promotes compliance without awarding compensation; ARSIWA provides the principles of responsibility without a dedicated climate claims institution; UNCLOS stabilises marine environmental obligations but does not provide a comprehensive territorial-loss regime;

and human-rights procedures protect persons without resolving inter-State allocation of cumulative climate injury. The result is a fragmented architecture in which the strongest substantive principles do not yet produce a predictable remedial pathway.

The proposed Climate Territorial Loss Protocol addresses that institutional problem without replacing the existing law. It would create a scientific attribution panel, a two-track finance and responsibility-based reparation system, a dedicated Claims Chamber, a Montreal-style compliance process, and express continuity rules for statehood and maritime entitlements. Its comparative precedents are component precedents rather than direct climate precedents: the IOPC Funds demonstrate tiered compensation; the Montreal Protocol demonstrates ongoing compliance management; the UN Compensation Commission demonstrates mass claims and expert valuation; and UNCLOS demonstrates consent-based compulsory settlement.

The most important legal safeguard is that the Protocol would not turn scientific contribution automatically into strict responsibility. A respondent would remain entitled to contest breach, causation and the scope of reparation. At the same time, a claimant would no longer be forced to choose between emergency climate finance and a responsibility claim, nor would a physical change in geography automatically threaten legal personality or maritime rights. The proposal therefore treats legal continuity as a component of the remedy: the law must survive the physical transformation it is attempting to govern.

For participating States, compliance with the proposed regime would materially reduce the legal gaps identified in this paper. It would create known standards of evidence, a predetermined forum, distinct routes for emergency support and responsibility-based reparation, a compliance process, and continuity rules. It would not eliminate climate risk, political disagreement or scientific uncertainty, and it would not bind States that refuse to participate. Its legal contribution is more precise: it would make the consequences of climate-induced territorial loss administratively and judicially manageable within a treaty framework that is compatible with existing public international law.

The first part of that effect is evidentiary. Under the proposed Protocol, the scientific question would be separated from the legal question. The International Climate Attribution Panel would not determine State responsibility; it would establish a transparent evidentiary record concerning physical change, anthropogenic contribution, the relevant State contribution and uncertainty ranges. The Claims Chamber would then apply the ordinary law of State

responsibility to that record. The result is not automatic liability for emissions, but a procedure in which the same scientific methodology can be tested across cases rather than recreated in every dispute. This directly answers the present causation and apportionment gap while preserving the respondent State's right to contest breach, causation and remedy.

The second part is remedial separation. Affected States should not have to prove wrongful conduct before receiving money needed to prevent further loss, relocate public institutions or protect communities. At the same time, no-fault finance cannot substitute for reparation where a legally wrongful act has been established. The two-track model therefore follows the institutional logic already visible in international compensation regimes: emergency or solidarity finance can operate quickly, while responsibility-based compensation remains subject to proof and adjudication. A coordination rule would prevent double recovery. This makes the proposed regime workable both for claimants seeking immediate assistance and for respondents entitled to a legally disciplined determination of responsibility.

The third part is enforcement. The Claims Chamber would supply a forum and binding determination for disputes within the Protocol, while the Compliance Committee would address implementation failures without turning every reporting problem into adversarial litigation. Advance consent through ratification makes jurisdiction predictable rather than dependent on a respondent accepting the case after the injury occurs. The architecture therefore adds a narrow enforcement layer for territorial injury without attempting to turn the entire climate regime into a court.

Finally, the Protocol would protect the legal existence of an affected State independently of the success of a compensation claim. A State should not have to trade legal continuity for proof of damages. Express preservation of established maritime entitlements, international legal personality, nationality and institutional membership would separate the physical consequences of sea-level rise from the legal identity of the State concerned. Its central claim is modest: not that existing international law is incapable of responding, but that a focused treaty mechanism can connect rules that already exist into a procedure capable of delivering predictable outcomes.

The central lesson is therefore institutional rather than revolutionary. Public international law already contains many of the rules required to recognise and condemn unlawful climate conduct. What it lacks is a sufficiently integrated mechanism for a particular class of injury in

which physical territory can disappear before legal responsibility and legal remedy have been organised. A focused supplementary protocol, built on existing responsibility doctrine and informed by tested institutional precedents, offers a way to close that gap without discarding the legal architecture that has already developed.