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CLIMATE CHANGE AND STATE RESPONSIBILITY IN INTERNATIONAL LAW: FROM THE DUTY TO PREVENT TO REPARATION AFTER THE ICJ'S 2025 ADVISORY OPINION

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ABSTRACT :

Few legal problems strain the law of State responsibility as severely as climate change. The emissions behind it originate in innumerable public and private activities; they accumulate in the atmosphere across decades; and the injuries they produce frequently arise far from their point of release. Because harm of this kind is cumulative and transboundary, it has long been difficult to identify the governing international obligations, to determine whose conduct is legally relevant, to establish what caused a particular injury, and to decide whether reparation is owed.

Much of the regulatory work has been carried out by treaty, namely the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement. Treaty law is not the whole of it, however. Customary environmental law, the law of the sea and human rights law each contribute distinct obligations. The International Court of Justice drew these bodies of law together when it delivered its Advisory Opinion on *Obligations of States in respect of Climate Change* on 23 July 2025. According to the Court, breaches of climate-related obligations fall under the general law of State responsibility, and a wrongful act may take the form of an omission, such as a lack of due diligence or a failure to regulate private emitters.

Two matters are examined here: whether existing international law permits States to be held responsible for climate harm, and how the Opinion reshapes the analysis of attribution, causation and reparation. The article contends that the central inquiry has moved on. Whether climate change is capable of engaging State responsibility is no longer seriously in doubt; the pressing task is to apply established rules to harm that accrues gradually from numerous sources. By connecting the primary obligations of climate law with the secondary rules of responsibility, the Opinion closes an important gap. Substantial obstacles persist all the same: proof of causation, the presence of multiple contributing States, the treatment of historical emissions, the valuation of environmental loss, and access to a forum possessing both jurisdiction and enforcement capacity.

The conclusion reached is that international law imposes no automatic or pro rata liability for global climate damage. Instead, it furnishes a coherent but fact-dependent route to responsibility, which becomes available once a State violates an obligation binding upon it. The extent to which that route is used will depend on international adjudication, climate science, State practice and the development of practical mechanisms for assessing and repairing climate injury.

Keywords: Climate Change; State Responsibility; International Environmental Law; International Court of Justice; Paris Agreement; Due Diligence; Causation; Reparation; Climate Litigation; International Law.

I. INTRODUCTION

Climate change now ranks among the most urgent challenges confronting international law. On the central question the science leaves no room for doubt: global warming has unequivocally been caused by human activity, and ecosystems, communities and States are already experiencing its effects.⁰ Those effects include higher temperatures, altered rainfall, warming oceans, rising seas, declining biodiversity and an increased likelihood of certain extreme weather events.²

Establishing that the phenomenon is real presents little difficulty. The legal problem lies in a different place.

In international law, responsibility generally depends on the answers to three enquiries: whether an obligation exists, whether the relevant conduct is attributable to a State, and whether that conduct amounts to a breach. The International Law Commission's Articles on Responsibility of States for Internationally Wrongful Acts (ARSIWA) are built on a distinction between primary rules, which define the duties of States, and secondary rules, which determine the consequences of failing to perform them.³

That model accommodates climate change only with difficulty. Governments, State-owned enterprises, private corporations and individuals all emit greenhouse gases, which then remain in the atmosphere and build up over time. Emissions from one State become part of a planetary process whose consequences may materialise in another State decades afterwards, while a particular flood or drought may have multiple anthropogenic and natural causes operating together.

Several difficult questions arise as a result. Can a State be held answerable for private emissions that it did not control? Is its responsibility defeated by the fact that it is only one contributor among many? Is it possible for a State affected by flooding, drought or sea-level rise to demonstrate that its losses flowed from wrongful conduct on the part of another State? Should responsibility be established, may compensation be recovered?

International law long left these questions unresolved.

Treaty-making proceeded through the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol and the Paris Agreement. Under the Paris Agreement, concluded in 2005, the increase in global average temperature is to be held well below 2°C above pre-industrial levels, with efforts pursued to limit it to 0.5°C.⁴ The Agreement also established the framework of nationally determined contributions (NDCs), which obliges each Party to prepare, communicate and maintain successive contributions.⁵

The existence of a specialised regime prompts a further enquiry. Are general customary law and the ordinary rules of State responsibility displaced by it? By Resolution 77/276 of 29 March 2023, the UN General Assembly referred this question, together with others, to the International Court of Justice (ICJ).⁶ The Advisory Opinion followed on 23 July 2025.

The significance of the Opinion lies in the Court's unwillingness to confine climate change to an isolated legal compartment. Climate treaties were interpreted alongside customary law, the law of the sea and human rights law, and the Court concluded that the general law of State responsibility applies to a breach of an obligation drawn from any one of these sources.⁷

The Court's treatment of causation deserves particular notice. Two opposing positions were rejected: that causation cannot be proved in climate cases, and that it may simply be presumed. The Court instead retained its established requirement of a 'sufficiently direct and certain causal nexus', which it considered flexible enough to address climate harm.⁸

On the reading advanced here, the Opinion marks a point of transition. Until July 2025, debate centred on whether the traditional law of State responsibility could address climate change at all. Since then, attention has turned to the manner of its application.

This article maintains that international law now provides a coherent route to State responsibility for climate harm, although not one leading to automatic liability. Claimants must still point to an obligation binding the respondent State and attribute the relevant conduct to that State. Where reparation is claimed for particular damage, they must also demonstrate an adequate causal link.

Accordingly, the analysis traces a single sequence:

international obligation → State conduct → breach → attribution → causation → injury → responsibility → reparation.

II. RESEARCH QUESTIONS, OBJECTIVES AND METHOD

A. Research Question

The inquiry is framed around one principal question: *how far may States be held responsible under existing international law for climate-related harm following the ICJ's Advisory Opinion of 23 July 2025?*

Five subsidiary questions support it:

1. What international obligations regulate State conduct that contributes to climate change?
2. Is responsibility for climate harm governed by the Paris Agreement alone, or do other bodies of law also apply?
3. In what way do attribution and due diligence operate where private actors are the source of emissions?
4. How may causation be demonstrated where harm results from emissions accumulated over time?
5. Which forms of reparation can follow from an internationally wrongful act?

B. Objectives

The article aims first to map the principal sources of international climate obligations and to explain their relationship with the general law of State responsibility. It then analyses the ICJ's reasoning on due diligence, attribution and causation, and considers the circumstances in which cessation, restitution, compensation and satisfaction may be obtained. Two unresolved issues, historical emissions and multiple contributing States, are evaluated next. The implications of the 2025 Opinion for future climate litigation are assessed last.

C. Method

A doctrinal and analytical method is adopted.

The primary materials consist of treaties, the ARSIWA, resolutions of the UN General Assembly, and decisions and advisory opinions of international courts and tribunals, with particular emphasis on the ICJ and the International Tribunal for the Law of the Sea (ITLOS). Books, peer-reviewed articles and recent commentary on the 2025 Opinion make up the secondary materials.

Scientific material serves a narrow purpose. The factual and evidential background required for the legal analysis is drawn from the assessment reports of the Intergovernmental Panel on Climate Change (IPCC). These reports complement the legal authorities rather than substituting for them.

III. THE SOURCES OF CLIMATE OBLIGATIONS

A. Why Climate Change Strains International Law

Most environmental disputes follow a more familiar pattern. Pollution from an upstream smelter enters a river and damages the downstream State, so that the source, the pathway and the victim can each be identified. Climate change departs from this pattern. Across many generations, numerous States and private actors have discharged gases into a single common atmosphere, producing effects that are distributed worldwide.

Individual State conduct does not thereby lose its legal relevance. What follows, rather, is the need to separate four questions:

1. Has the State contributed to the physical climate system?
2. Has it breached a legal obligation?
3. Is that breach attributable to it?
4. Does it bear responsibility for a particular injury?

Whereas the first question concerns physical fact, the remaining three are legal, and none of them can be reduced to the first. Contributing to global warming does not render every tonne of a State's emissions unlawful. Conversely, responsibility may arise from inaction, as where a State fails to exercise the due diligence required by international law, even though private companies produce the emissions in question.

Recent jurisprudence reflects this distinction. According to the 2025 Opinion, the wrongful act in a climate case will ordinarily consist of the State's failure to comply with an applicable obligation, rather than the mere emission of greenhouse gases.⁹

This clarification operates as a doctrinal safeguard. It prevents the law from drifting towards a simplistic theory of climate liability.

B. Treaty Obligations

0. The UNFCCC

Today's climate regime rests on the UNFCCC. Under Article 2, the Convention's ultimate aim is to hold the concentration of greenhouse gases in the atmosphere at a level low enough to avoid dangerous anthropogenic interference with the climate system.⁰⁰

Beyond that aim, the treaty contains provisions on finance, the transfer of technology, international cooperation, reporting, adaptation and mitigation. Article 3 lists the principles meant to steer the Parties, and equity sits there alongside common but differentiated responsibilities and respective capabilities (CBDR-RC).

Two roles follow. The Convention binds the States that have joined it, and it also shapes how later climate instruments are read.

2. The Kyoto Protocol

Building on the Convention, the Kyoto Protocol assigned quantified emission limitation or reduction targets to certain developed-country Parties.⁰⁰

Although the Paris Agreement is now central to the regime, Kyoto continues to illuminate the development of differentiated obligations. It demonstrates that climate law has never regarded all States as identically situated.

This history is relevant to responsibility. The requirements of due diligence, and the assessment of a State's conduct, may vary according to its capabilities, the scientific knowledge available at the relevant time and the obligations in force during the period concerned.

3. The Paris Agreement

Today the Paris Agreement occupies the central position among climate treaties. The long-term temperature goal appears in Article 2(0)(a), and the NDC system is established by Article 4. Under Article 4(2), every Party must prepare, communicate and maintain successive NDCs and pursue domestic mitigation measures directed at achieving them.⁰² In its 2025 Opinion the ICJ regarded 0.5°C as the primary temperature goal of the Agreement.⁰³

The Agreement combines binding procedural duties with contributions whose content each State determines for itself. This distinction has practical consequences for responsibility. Failing to achieve an NDC target differs from failing to prepare, communicate or maintain one, and the precise content of the obligation must therefore be identified before any breach can be established.

The ICJ recognised this distinction in 2025, and it situated the Paris obligations within the broader corpus of international law.⁰⁴

C. Custom and the No-Harm Rule

The treaty regime does not exhaust the relevant law. Customary international environmental law also requires States to exercise due diligence to prevent significant environmental harm.

That obligation can be traced to the *Trail Smelter* arbitration, which concerned damage to land in the United States caused by fumes from a Canadian smelter.⁰⁵ The ICJ subsequently developed the principle. *Pulp Mills on the River Uruguay* characterised the principle of prevention as a customary rule rooted in due diligence, and required an environmental impact assessment for activities posing a risk of significant transboundary harm.⁰⁶ The Court returned to the obligations to assess and to prevent in *Certain Activities Carried Out by Nicaragua in the Border Area*.⁰⁷

Climate change falls directly within the scope of these rules. Although greenhouse gases do not behave like conventional local pollutants, they nevertheless generate foreseeable risks to the climate system and to other States. The ICJ confirmed in 2025 that the climate system is covered by the customary duty to prevent significant environmental harm.⁰⁸

The implications are considerable. Responsibility for climate harm does not depend on the text of any individual treaty, since customary law can furnish independent obligations.

D. Due Diligence

The link between climate obligations and State responsibility is provided by the standard of due diligence.

This standard does not require a State to guarantee any environmental result. It requires the

State to adopt appropriate measures in view of the foreseeable risk. What due diligence demands therefore depends on the circumstances. Relevant considerations include the magnitude of the risk, the state of scientific knowledge, the technology and means available, the capabilities of the State, the foreseeability of the harm, the importance of the protected interest and any applicable international standards.

The 2025 Opinion relies substantially on this standard. According to the Court, protective measures for the climate system are required of every State, and whether they suffice is judged by reference to scientific knowledge, the nature of the risk and the means available to the State concerned.¹⁹ The Court characterised the standard as stringent, for instance in its application to the preparation of NDCs.²⁰ It further indicated that due diligence extends to the conduct of private actors by way of regulation that is effectively enforced.²⁰

Climate change is well matched to a due diligence standard. No State can ensure that its territory and population will be spared climate impacts. Every State can, however, be obliged to regulate activities and to adopt measures reasonably capable of preventing or reducing significant harm.

E. Common but Differentiated Responsibilities and Respective Capabilities

CBDR-RC ranks among the most difficult issues in climate responsibility.

Under this principle, responsibility for addressing climate change is shared by all States, while differences in their circumstances, capabilities and contributions are acknowledged. The principle is expressly stated in the UNFCCC, and it is carried into Article 2(2) of the Paris Agreement, which adds the qualification 'in the light of different national circumstances'.²²

Compared with most earlier international decisions, the 2025 Opinion addressed the principle in greater depth. The Court portrayed differentiation as a spectrum rather than a rigid division between developed and developing States, and it said that the requirements of diligence increase as a State's economy and capacity expand.²³ Commentators have interpreted the Opinion as demonstrating how differentiation may function through the due diligence standard itself.²⁴

Read in this way, differentiation does not necessarily generate distinct obligations of entirely different content. The degree of diligence required of a State may instead reflect the nature of the risk, the State's own contribution, its technological and other capabilities, and the context in which the particular obligation operates.

Differentiation can thus operate without reducing State responsibility to a mechanical, emissions-based liability formula.

IV. STATE RESPONSIBILITY: ATTRIBUTION AND BREACH

A. The ARSIWA Framework

The foundational rule appears in Article 0 of ARSIWA: every internationally wrongful act of a State entails the international responsibility of that State.²⁵ Article 2 identifies the constituent elements of such an act, namely conduct attributable to the State and the breach of an international obligation of that State.²⁶

Rules of this kind are secondary. They do not prescribe what a State must do. They regulate the consequences that ensue once a primary obligation has been violated.

Applied to climate change, the allocation of functions is straightforward. Customary environmental law, human rights law, the UNFCCC, the Paris Agreement and the United Nations Convention on the Law of the Sea (UNCLOS) supply the primary obligations. ARSIWA provides the general framework governing the consequences of breach.

In 2025 the ICJ confirmed that the climate treaties create no special, self-contained responsibility regime displacing the general law.²⁷ This may well be the most consequential of all the conclusions the Court reached.

B. Attribution

0. Conduct of State Organs

Article 4 of ARSIWA attributes to the State the conduct of any of its organs.²⁸ Where climaterelated conduct takes the form of legislation, executive decisions, the operation of government facilities, licensing, regulatory decisions or official inaction, attribution therefore presents relatively little difficulty.

The more complex cases are those involving private actors.

2. Private Actors

Private companies account for a substantial proportion of greenhouse gas emissions. Their conduct is not transformed into State conduct simply because they operate within the State's territory.

The State may nevertheless incur responsibility for its own failure to regulate such companies. The distinction is fundamental. The wrongful act does not lie in the fact that a private company released greenhouse gases. It may lie instead in the State's failure to show the diligence demanded by international law when regulating activities under its jurisdiction.

This very reasoning was endorsed by the ICJ in 2025.²⁹ The Court also gave concrete examples, stating that '[f]ailure of a State to take appropriate action to protect the climate system from GHG emissions — including through fossil fuel production, fossil fuel consumption, the granting of fossil fuel exploration licences or the provision of fossil fuel subsidies — may constitute an internationally wrongful act which is attributable to that State'.³⁰ Such conduct is wrongful only where a relevant obligation is breached.

The regulatory environment surrounding private emissions is thereby brought firmly within the scope of State responsibility.

C. Breach and the Place of Climate Science

The role of climate science in determining whether a State has fulfilled its obligations is expanding. Evidence of this kind may bear on attribution, causation, due diligence, foreseeability, the assessment of risk, environmental impact assessment and the extent of harm.

Science alone, however, cannot determine responsibility. Establishing that an activity contributed to climate change does not demonstrate that the activity violated international law. Four legal questions must still be answered:

1. Did an applicable international obligation exist?
2. Which standard did that obligation impose?
3. What did the State in fact do, or omit to do?
4. Did that conduct fall below the required standard?

Scientific evidence informs every one of these questions without resolving any of them independently. Keeping the two apart preserves the methodological soundness of climate litigation.

V. CAUSATION

A. Causation and Responsibility

The application of State responsibility to climate damage is most challenging at the stage of causation, an issue the ICJ confronted directly.

The Court began by distinguishing two matters. Causation of damage is not a prerequisite of State responsibility as such; what triggers responsibility is a wrongful act that can be attributed to the State. Causation becomes central when attention shifts to the reparation owed for damage.³⁰

This distinction has real consequences. A breach may exist before any injured State has established a compensable loss. Once compensation is sought, however, the claimant must demonstrate a causal connection between the wrongful conduct and the injury.

B. The 'Sufficiently Direct and Certain' Causal Nexus

The test applied by the Court was its established requirement of a 'sufficiently direct and certain causal nexus' between the wrongful act and the injury.³² Far from regarding this test as unworkable in the climate context, the Court considered it flexible enough to accommodate the distinctive features of climate harm.³³

A two-stage inquiry was then set out.³⁴ The first stage asks whether a particular climatic event or trend is attributable to anthropogenic climate change, a matter that scientific evidence will frequently resolve. The second stage asks to what extent the resulting damage is attributable to a particular State or group of States. That question calls for a legal and factual assessment of the State's contribution, conducted case by case.

Structuring the inquiry in two stages prevents climate causation from becoming an all-or-nothing determination.

C. Concurrent and Multiple Causes

As a general matter, international law does not require that the wrongful conduct of a single State be the exclusive cause of an injury.

This position is not new to the ICJ. When it ruled on reparations in *Armed Activities on the Territory of the Congo* in 2022, the Court held that concurrent causes do not, by themselves, relieve a responsible State of its obligation to make reparation.³⁵

Climate change magnifies the problem, because emissions from numerous States may contribute to a single injury. According to the 2025 Opinion, several States may each be responsible for their own wrongful conduct, and an injured State may separately invoke the responsibility of each of them.³⁶

This does not mean that every State is liable for the entirety of global climate damage. Responsibility must be assessed by reference to the particular wrongful conduct and the causal link applicable to it.

D. Overdetermination

'Overdetermination' is the label Ilias Plakokefalos applies to circumstances in which a harmful outcome results from the combined operation of several causes.³⁷ Climate injury exemplifies such circumstances and presents two separate problems.

Factual causation. Did the conduct of the State contribute to the injury?

Scope of responsibility. For which consequences ought the State to bear legal responsibility?

These two questions should be kept distinct. The emissions of a State may form part of the factual cause of global warming without rendering that

State legally responsible for every climate-related loss occurring anywhere in the world.

The emphasis the 2025 Opinion places on case-by-case assessment accommodates this distinction well.

E. Historical Emissions

A further complication arises from historical emissions, since present warming results in part from emissions accumulated over an extended period.

The legal relevance of past emissions depends upon the obligations binding the State at the time they occurred. Treating every historical emission as unlawful merely because its consequences are now understood would be analytically unsound. Responsibility requires the breach of an obligation in force at the relevant time.

A number of questions follow. At what point did the relevant customary obligations crystallise? When did scientific understanding become sufficiently settled? In what manner do treaty obligations operate over time? How did the climate regime itself evolve? And how much weight should historical contribution receive when responsibility is allocated today?

The Court regarded the temporal scope of the obligations as a matter requiring concrete assessment in individual cases and left it outside the Opinion.³⁸

Scholarship on climate reparations has additionally suggested that the principle of full reparation may be subject to exceptions in this area, for instance where the injury is indirect or where past conduct carries limited culpability.³⁹

The Opinion provides no formula for historical emissions. Future litigation will need to address the temporal question directly.

VI. FURTHER LEGAL PATHWAYS

A. Obligations Erga Omnes

Because protection of the climate is a collective undertaking, it may be asked whether certain climate obligations are owed to the international community as a whole. Obligations of that kind have long been recognised by the ICJ under the label *erga omnes*.

The 2025 Opinion places the customary duties protecting the climate system, above all the duty to prevent significant transboundary harm, in the *erga omnes* category. Treaty obligations under the UNFCCC and the Paris Agreement, by contrast, are characterised as *erga omnes partes*: they are owed to every other Party.⁴⁰

Standing is affected as a consequence. Under Article 48 of ARSIWA, a State other than an injured State may invoke responsibility where the obligation breached is owed either to the international community as a whole or to a group of States that includes it and was established to protect a collective interest.⁴⁰

The rule assumes considerable importance in the climate context. Climate harm pays no regard to borders. A State may therefore possess a legally protected interest in compliance even where it cannot identify injury limited to its own territory, and the procedural reach of climate obligations expands correspondingly.

B. The Law of the Sea

The law of the sea offers a further avenue towards climate responsibility.

In May 2024, responding to a request from the Commission of Small Island States on Climate Change and International Law (COSIS), ITLOS rendered an advisory opinion.⁴² Its conclusion was that anthropogenic greenhouse gas emissions into the atmosphere constitute pollution of the marine environment within the meaning of UNCLOS.⁴³ The Tribunal went on to examine Article 094, under which States must take all necessary measures to prevent, reduce and control such pollution, and it emphasised both due diligence and the duty to cooperate.⁴⁴

For small island States these matters are far from abstract. Rising seas, warming oceans, the loss of coral and the disruption of marine ecosystems may threaten their economies and, in certain cases, their very survival.

The 2024 opinion demonstrates that climate obligations may derive from general and sectorspecific treaties extending well beyond the UNFCCC. The ICJ's 2025 Opinion adopts a similarly plural approach.

C. Environmental Impact Assessment

Environmental impact assessment (EIA) constitutes a further procedural obligation. The ICJ held in *Pulp Mills* that an EIA must be undertaken where a proposed activity may cause significant transboundary harm.⁴⁵

This obligation is especially pertinent to fossil fuel extraction, large industrial installations, mining, major infrastructure, power generation and other activities emitting substantial quantities of greenhouse gases. Its function is preventive. The foreseeable environmental consequences of a potentially harmful project must be identified and evaluated before the State authorises or undertakes it.

In a climate case, a deficient EIA may accordingly serve as evidence that a State failed to exercise due diligence. The 2025 Opinion situates EIA within the broader framework for protecting the climate system.⁴⁶

D. Human Rights and Climate Change

Climate claims are increasingly advanced through human rights law. Climate change may affect a wide range of rights, among them the rights to health, life, water, food, housing, culture, family life and self-determination.

Resolution 76/300 of the UN General Assembly gave recognition to the human right to a clean, healthy and sustainable environment.⁴⁷ Climate-related complaints have also come before human rights bodies with increasing frequency.

The value of this perspective lies in its treatment of climate harm as injury to individuals, and not solely to States. Human rights law formed part of the applicable law identified by the ICJ, and the Court held that States' human rights obligations require them to take the measures needed to protect the climate system.⁴⁸

Even so, a climate-related harm does not automatically generate responsibility under human rights law. A claimant still has to show which right is engaged, what duty corresponds to it, how the jurisdictional connection arises and how the harm was caused.

E. Conduct That May Amount to an Internationally Wrongful Act

Following the 2025 Opinion, responsibility may potentially arise from several categories of State conduct:

1. a failure to adopt appropriate climate regulation;
2. a failure to regulate major private sources of emissions;
3. a failure to exercise the required due diligence;
4. a failure to prepare, communicate or maintain NDCs as required;
5. a failure to undertake an EIA where one is required;
6. the grant or maintenance of licences in breach of applicable obligations;
7. the grant of subsidies where doing so breaches an applicable obligation; 8. a failure to cooperate where cooperation is legally required; and
9. any other act or omission inconsistent with applicable international law.

These categories identify possibilities rather than establishing illegality. The involvement of fossil fuels does not by itself make a project an internationally wrongful act. The decisive question in each case is whether the act or omission of the State breaches a binding international obligation. Adherence to that question prevents the law of State responsibility from turning into a regime of strict climate liability.

VII. LEGAL CONSEQUENCES OF STATE RESPONSIBILITY

A. The General Framework

Once an internationally wrongful act has been established, several consequences follow under the general law of State responsibility.

According to Article 29 of ARSIWA, these consequences leave intact the responsible State's duty to perform the obligation it has breached.⁴⁹ Cessation, together with assurances and guarantees of non-repetition, is addressed in Article 30. Article 30 establishes the obligation to make full reparation for the injury caused by the wrongful act,⁵⁰ and Article 34 identifies its forms as restitution, compensation and satisfaction.⁵⁰

The ICJ confirmed that the full array of these consequences may attach to a breach of climate obligations.⁵² Each remedy calls for separate consideration in the climate setting.

B. Cessation

Cessation is relevant where the wrongful conduct continues. In the climate context, it may oblige a State to discontinue conduct incompatible with its international obligations.

According to the ICJ, cessation may require a State to employ all the means at its disposal to reduce greenhouse gas emissions and, where necessary, to revoke measures constituting wrongful conduct. The obligations of cessation and non-repetition arise irrespective of whether damage has been established.⁵³

In concrete terms, cessation could entail regulatory reform, the withdrawal of unlawful authorisations, stricter emission standards, adjustments to subsidies, additional mitigation measures or any other steps required to restore the State's compliance with international law.

This remedy is important because climate responsibility is not confined to payment for past harm. A State that continues in breach remains bound by the underlying obligation.

C. Restitution

Restitution aims to re-establish the situation that existed before the wrongful act was committed. The principle received its classic statement in *Factory at Chorzów*, where the Permanent Court of International Justice held that reparation must, as far as possible, eliminate all the consequences of the illegal act.⁵⁴

Climate change imposes evident constraints. Certain effects are irreversible: an ecosystem that has disappeared may not be restored, land that has been submerged may not be reclaimed, and cultural loss may be incapable of physical or financial repair.

Restitution nonetheless retains a role. It might involve restoring ecosystems, reconstructing infrastructure, reinstating environmental services, rehabilitating damaged areas or adopting other measures that return the injured party to its prior position. The ICJ accepted that restitution may be relevant in climate cases; its application will depend on the facts.⁵⁵

D. Compensation

Compensation assumes the greatest importance where restitution is impossible or inadequate.

The ICJ has already treated environmental damage as compensable. When it assessed compensation in *Certain Activities* in 2008, the Court made an award for environmental harm, covering the impairment or loss of environmental goods and services.⁵⁶ The 2025 Opinion reaffirms that environmental damage is compensable in and of itself.⁵⁷

It follows from these authorities that environmental injury does not fall outside the law merely because it differs from conventional commercial loss. Climate claims might seek compensation for environmental degradation, infrastructure damage, economic loss, adaptation costs, the loss of ecosystem services, restoration costs and any other injury recognised by law.

Assembling the necessary evidence will be difficult. The claimant must establish the requisite causal link between the wrongful conduct and the injury, and the 2025 Opinion states expressly that causation cannot be presumed.⁵⁸

E. Satisfaction

Reparation may also take the form of satisfaction, which can consist of an acknowledgement of the breach, an expression of regret, a declaration by a court, a formal apology or any other fitting measure.

In climate disputes a declaratory judgment may prove especially valuable. A State may seek a formal determination that another State breached an international obligation even where its loss is not readily expressed in monetary terms.

The point matters because a large share of climate harm is entirely non-economic.

F. A Global Sum?

Part of the ICJ's reasoning addresses the difficulty of quantifying climate damage.

The Court has previously held that a lack of precise evidence does not invariably preclude compensation. In *Armed Activities*, it stated that it may, on an exceptional basis, fix compensation as a global sum when the evidence does not allow the precise extent of the damage to be determined.⁵⁹ The 2025 Opinion indicates the same possibility for climate cases.⁶⁰

The point should not be exaggerated. The ICJ established no climate compensation fund and devised no formula for distributing global climate losses. Its indication went no further than suggesting that the present rules on reparation can adapt to incomplete evidence. Whether a global sum could in fact be awarded would fall to be decided in contentious proceedings.

G. Several Responsible States and Apportionment

Climate change raises the possibility that several States may each commit a distinct wrongful act contributing to one and the same injury.

Under Article 47 of ARSIWA, where several States are responsible for the same internationally wrongful act, the responsibility of each may be invoked, although the injured State may not recover more than the damage it has suffered.⁶⁰ The 2025 Opinion acknowledges that more than one State may bear responsibility in the climate context.⁶²

No rule of proportional liability based on shares of emissions results from this. A State responsible for 5 per cent of historical emissions is not, on that basis alone, liable for 5 per cent of a claimant's loss.

The analysis must instead weigh which obligation was breached and when, what kind of conduct is in issue, how far it contributed to the injury, whether the causal link holds, and which rules of reparation apply. Separating physical contribution to warming from the legal apportionment of responsibility will probably continue to be one of the thorniest issues facing future climate litigation.

VIII. EVALUATING THE 2025 ADVISORY OPINION

A. Why the Opinion Matters

Five principal reasons account for the significance of the Opinion.

Multiple sources are recognised. Obligations flow from human rights law, the law of the sea, customary international law and the climate treaties alike.

A treaty-only reading is rejected. The applicable international law is not exhausted by the Paris Agreement.

Due diligence is placed at the core. State conduct is assessed against a demanding and context-sensitive standard, informed by science and by the means available.

The law of State responsibility is held applicable. Breaches of climate obligations are governed by the ordinary law of internationally wrongful acts.⁶³

Breach is connected to remedies. Where the legal requirements are satisfied, cessation, nonrepetition and full reparation may follow.

Taken collectively, these features connect the preventive dimension of climate law with accountability for breach.

B. What the Opinion Does Not Do

The scope of the Opinion should be kept in perspective.

Being advisory, it determined the responsibility of no State. It calculated no compensation for climate damage and established no general formula for apportioning global climate losses among States. The need to prove causation in concrete claims was not removed, and the jurisdictional requirements governing contentious proceedings were left unaffected.

These limitations are significant because the Opinion is occasionally portrayed as conferring an automatic right to climate compensation. It confers no such right. Its principal contribution lies in clarifying the law.

C. Future International Climate Litigation

At least six consequences for future litigation can be anticipated.

Omission-based claims. Claims may be brought alleging that States failed to regulate emissions or to adopt adequate climate measures.

Claims concerning private emissions. Litigation may increasingly examine whether States exercised adequate control over their biggest private emitters.

Claims by vulnerable States. Climate obligations may be relied upon by small island States, and by other States acutely exposed to climate impacts, to challenge conduct that affects their land, environment and people.

Claims for environmental damage. The *Certain Activities* jurisprudence may lend support to claims concerning environmental loss and lost ecosystem services.

Human rights claims. Environmental and human rights obligations may increasingly be relied upon together.

Law of the sea claims. Following the 2024 ITLOS opinion, disputes about harm to the oceans from climate change have an additional forum-based route.

Only as these cases are brought will the practical content of the Opinion come fully into view.

D. Critical Assessment

The principal merit of the existing framework is that it requires no new system of climate liability. Settled rules already exist on breach and attribution, on due diligence and environmental impact assessment, on causation, and on cessation, restitution, compensation and satisfaction; the 2025 Opinion carries them over to the climate field.

Limitations nonetheless remain.

Causal complexity is the first. Climate change has numerous contributors and numerous consequences. Scientific attribution methods are becoming steadily better at connecting emissions with particular climatic phenomena, but assigning specific damage to a specific State as a matter of law is a harder task.⁶⁴

Historical responsibility is the second. The law must distinguish present obligations from conduct that predates the settlement of those obligations.

Enforcement is the third. An advisory opinion clarifies the law, but it establishes no compulsory compensation mechanism.

Jurisdiction is the fourth. A contentious case before the ICJ requires a jurisdictional basis, which will not always be available.

Quantification is the fifth. Even once responsibility and causation have been established, valuing ecosystem damage, non-economic loss and climate-related displacement may prove extremely difficult.

The Opinion accordingly settles an important doctrinal question while leaving substantial practical questions unanswered.

E. Contribution of This Article

This article treats the 2025 Opinion as something more than a restatement of climate obligations. It reads the Opinion as signalling a shift from preventive regulation towards accountability founded on responsibility.

The traditional concerns of international climate law, namely reporting, finance, technology transfer, cooperation, adaptation and mitigation, are all preventive and regulatory in character. The law of State responsibility addresses a different question: what consequences follow the breach of an international obligation?

The Opinion unites these two concerns. The framework that results may be expressed as follows:

primary obligation → State conduct → breach → attribution → causal link → injury → responsibility → cessation or reparation.

Two errors are avoided by this framework. One treats climate change as incapable of engaging State responsibility on account of causal complexity. The other treats every State's contribution to global warming as a basis for unlimited liability. Neither corresponds to the law as it is currently developing. The more defensible position is that responsibility is legally attainable but depends on the facts of each case.

IX. FINDINGS AND RECOMMENDATIONS

A. Findings

Twelve findings emerge from the research.

Finding 0. Several sources of international law give rise to State obligations concerning climate change.

Finding 2. The Paris Agreement constitutes neither an exclusive framework nor a self-contained responsibility regime.

Finding 3. Climate change falls within the duties of prevention and due diligence that customary international environmental law imposes.

Finding 4. State conduct on climate is measured chiefly against the benchmark of due diligence.

Finding 5. Where an applicable international obligation calls for the regulation of private actors, a State that fails to regulate them may incur responsibility.

Finding 6. When climate-related obligations are breached, the consequences are determined by the general law of State responsibility.

Finding 7. Proof of causation remains legally possible in the climate context.

Finding 8. Causation is chiefly significant where reparation is claimed for particular damage.

Finding 9. Concurrent causes do not in themselves preclude State responsibility.

Finding 00. Under international law, environmental damage may constitute compensable injury.

Finding 00. Adding up each State's cumulative contribution does not settle the questions of timing that historical emissions pose.

Finding 02. Although the 2025 Advisory Opinion clarifies the doctrinal foundation of climate responsibility, it establishes neither automatic liability nor a general compensation mechanism.

B. Recommendations

1. **Attribution methodologies.** International institutions should support scientifically rigorous methods capable of connecting specific emissions and State conduct with particular categories of harm.
2. **Clarification of due diligence.** Courts and tribunals should, case by case, give fuller content to what States can reasonably be expected to do, having regard to risk, capability and the state of scientific knowledge.
3. **Valuation of environmental damage.** International courts need reliable methods for valuing ecosystem services, biodiversity and non-economic environmental loss.
4. **Environmental impact assessment.** States should integrate climate effects into the assessment of major projects.
5. **Access to dispute settlement.** Vulnerable States should enjoy genuine opportunities to invoke the obligations that protect them.
6. **Consistency across regimes.** Wherever possible, the ICJ, ITLOS and human rights bodies should interpret overlapping environmental obligations uniformly.
7. **Domestic climate regulation.** Because international responsibility depends largely on domestic legislation, licensing, regulation and enforcement, these domestic measures should be strengthened.

X. CONCLUSION

Few tests facing contemporary international law are as exacting as climate change. Its cumulative causes, global effects and scientific complexity place the conventional models of State responsibility under strain. They do not, however, remove climate change from the reach of law.

The UNFCCC, the Kyoto Protocol and the Paris Agreement establish significant treaty obligations. Customary environmental law supplies duties of prevention and due diligence, and UNCLOS contributes obligations concerning marine pollution. Human rights law, for its part, shows that the rights of individuals may be infringed by the effects of climate change.

International courts and tribunals have developed these principles progressively. The earliest groundwork for liability in respect of cross-border environmental damage appears in *Trail Smelter*. The standing of due diligence and environmental impact assessment was strengthened in *Pulp Mills*. *Certain Activities* then established that compensation is available where the environment itself is harmed. ITLOS, for its part, held in 2024 that anthropogenic greenhouse gas emissions come within the UNCLOS concept of pollution of the marine environment.

The ICJ's 2025 Advisory Opinion represents the most important recent development. The Court confirmed that climate obligations derive from several sources of international law and that their breach is governed by the ordinary law of State responsibility. Responsibility, it accepted, may flow from omissions as well as acts, a failure to regulate private actors being one example. It rejected the contention that climate causation is inherently incapable of proof, and it rejected with equal firmness any presumption of causation.

After the Opinion, the legal position may be expressed with precision:

International law permits States to be held responsible for climate-related wrongful conduct, yet it imposes no automatic liability for global climate change as a whole.

Claimants must still demonstrate an applicable obligation and its breach, and the conduct in question must be attributable to the respondent State. Where particular damage is alleged, a sufficiently direct and certain causal nexus between the wrongful conduct and the injury is required.

The framework is demanding. Its demands do not render it ineffective.

The greatest significance of the Opinion may lie in the way it reframes the debate. The real question is no longer whether climate change can be accommodated within the law of State responsibility; it can. The open question is how that law will be brought to bear by international courts on actual disputes, with their cumulative emissions, historical conduct, plural responsible States, scientific attribution and environmental damage.

Climate responsibility will develop through the combined operation of three elements: international law, climate science and evidence. The law supplies obligations and their consequences. Science furnishes much of the factual basis for assessing risk and causation. Whether the evidence meets the legal standard is for courts and tribunals to decide.

Through the 2025 Advisory Opinion, this process now has its legal architecture, although the structure remains incomplete. It is for contentious proceedings yet to come, for the practice of States and for later international decisions to reveal whether the principles the Court clarified can be translated into effective accountability and meaningful reparation for climate-related harm.

FOOTNOTES — OSCOLA (4TH EDITION)

1. IPCC, 'Summary for Policymakers' in *Climate Change 2023: Synthesis Report* (IPCC 2023) para A.0.
2. *ibid.*
3. International Law Commission, 'Articles on Responsibility of States for Internationally Wrongful Acts', annexed to UNGA Res 56/83 (02 December 2000) UN Doc A/RES/56/83 (ARSIWA) arts 0–2.
4. Paris Agreement (adopted 02 December 2005, entered into force 4 November 2006) 3056 UNTS 79, art 2(0)(a).
5. *ibid* art 4(2).
6. UNGA Res 77/276, 'Request for an advisory opinion of the International Court of Justice on the obligations of States in respect of climate change' (29 March 2023) UN Doc A/RES/77/276.
7. *Obligations of States in respect of Climate Change* (Advisory Opinion, 23 July 2025) <<https://www.icjci.org/case/087>> (Climate Change Advisory Opinion) paras 400–420; see also Caroline E Foster, 'The 2025 International Court of Justice Advisory Opinion on *Obligations of States in respect of Climate Change*' (2025) 74 ICLQ 775.
8. Climate Change Advisory Opinion (n 7) paras 436–437.
9. Climate Change Advisory Opinion (n 7) para 427.
10. United Nations Framework Convention on Climate Change (adopted 9 May 0992, entered into force 20 March 0994) 0770 UNTS 007 (UNFCCC) art 2.
11. Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 00 December 0997, entered into force 06 February 2005) 2303 UNTS 062.
12. Paris Agreement (n 4) art 4.
13. Climate Change Advisory Opinion (n 7) paras 223–224.
14. *ibid* paras 245–254.
15. *Trail Smelter Arbitration (United States v Canada)* (0938 and 0940) 3 RIAA 0905.
16. *Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Judgment) [2000] ICJ Rep 04, paras 000, 204.
17. *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v Nicaragua)*; *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v Costa Rica)* (Judgment) [2005] ICJ Rep 665.
18. Climate Change Advisory Opinion (n 7) paras 035–039.
19. *ibid* paras 035–038; see also paras 280, 290–292.
20. *ibid* para 246.
21. *ibid* para 282.
22. Paris Agreement (n 4) art 2(2).
23. Climate Change Advisory Opinion (n 7) paras 048–050, 226, 292.
24. Lavanya Rajamani, 'Untangling the Gordian Knot: Differentiation in the ICJ's Advisory Opinion on Climate Change' (2026) *Journal of Environmental Law*, doi:00.0093/jel/eqag002.
25. ARSIWA (n 3) art 0.
26. *ibid* art 2.
27. Climate Change Advisory Opinion (n 7) paras 400–420; Foster (n 7).
28. ARSIWA (n 3) art 4.
29. Climate Change Advisory Opinion (n 7) para 428.
30. *ibid* para 427.
31. *ibid* paras 433–438.
32. *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v Nicaragua)* (Compensation) [2008] ICJ Rep 05, para 32; *Armed Activities on the Territory of the Congo (Democratic Republic of the Congo v Uganda)* (Reparations) [2022] ICJ Rep 03, para 93.
33. Climate Change Advisory Opinion (n 7) para 436.
34. *ibid* para 437.
35. *Armed Activities* (n 32) para 97.
36. Climate Change Advisory Opinion (n 7) paras 430–430.
37. Ilias Plakokefalos, 'Causation in the Law of State Responsibility and the Problem of Overdetermination: In Search of Clarity' (2005) 26 EJIL 470.
38. Climate Change Advisory Opinion (n 7), in its discussion of the determination of State responsibility.
39. Benoit Mayer, 'Climate Change Reparations and the Law and Practice of State Responsibility' (2007) 7 AsianJIL 085.
40. Climate Change Advisory Opinion (n 7) para 440.
41. ARSIWA (n 3) art 48.
42. *Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law* (Advisory Opinion, 20 May 2024) ITLOS Case No 30.
43. *ibid* para 079.

44. *ibid*; United Nations Convention on the Law of the Sea (adopted 00 December 0982, entered into force 06 November 0994) 0833 UNTS 3, art 094.
45. *Pulp Mills* (n 06) para 204.
46. Climate Change Advisory Opinion (n 7).
47. UNGA Res 76/300, 'The human right to a clean, healthy and sustainable environment' (28 July 2022) UN Doc A/RES/76/300.
48. Climate Change Advisory Opinion (n 7) para 457.
49. ARSIWA (n 3) art 29.
50. *ibid* art 30.
51. *ibid* art 34.
52. Climate Change Advisory Opinion (n 7) para 445.
53. *ibid* paras 445–448.
54. *Factory at Chorzów (Germany v Poland)* (Merits) PCIJ Rep Series A No 07, 47.
55. Climate Change Advisory Opinion (n 7) paras 446–455.
56. *Certain Activities* (Compensation) (n 32) paras 40–42.
57. Climate Change Advisory Opinion (n 7) para 453.
58. *ibid* paras 436–437.
59. *Armed Activities* (n 32) para 006.
60. Climate Change Advisory Opinion (n 7) paras 446–455.
61. ARSIWA (n 3) art 47.
62. Climate Change Advisory Opinion (n 7) paras 430–430.
63. Foster (n 7); John H Knox, 'Obligations of States in Respect of Climate Change, Advisory Opinion' (2026) 020 AJIL 346.
64. Michael Burger, Jessica Wentz and Radley Horton, 'The Law and Science of Climate Change Attribution' (2020) 45 Colum J Envtl L 57.

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