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The jurisdiction of the International Court of Justice in cases of territorial damage caused to States by climate change*

A competência da Corte Internacional de Justiça em casos de danos territoriais causados a Estados por mudanças climáticas

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Abstract

Since 1992 at the Earth Summit held in Rio de Janeiro where the United Nations Framework Convention on Climate Change was opened for signature, States have been aware that measures must be adopted in order to curb the effects of greenhouse gases. Thus, using the deductive method, as well as bibliographic and documentary research, this paper analyzes the legal conditions for the International Court of Justice to act as an international forum to determine the responsibility of states for non-compliance with obligations to reduce emissions. For this purpose, the analysis begins with the first environmental responsibility precedent issued by the International Court of Justice in the case Certain Activities Carried out by Nicaragua in the border area (Costa Rica v. Nicaragua), demonstrating that it is possible to attribute responsibility to States carrying out emissions and that do not meet the autonomously decided targets of the Paris Agreement, hence leading them to financial implications arising from the compensation for damage to the territory of States undergoing territorial reduction as a result of increasing sea levels and devastated by climate extremes. Finally, it will be demonstrated that climate disputes may occur both nationally, filed by individuals suffering the effects of climate change, and internationally, filed by the States. Therefore, the decision of the International Court of Justice is an important precedent concerning international environmental responsibility that should be taken into consideration in future litigation arising from climate change-related issues.

Keywords: certain activities carried out by Nicaragua in the border area; International Court of Justice; international environment harm; climate change; international responsibility.

Resumo

Desde 1992 na Conferência da Terra que ocorreu no Rio de Janeiro e onde foi aberta a assinatura a Convenção das Nações Unidas sobre Mudanças do Clima os Estados tem ciência que devem tomar medidas para reduzir os

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efeitos dos gases que provocam o efeito estufa. Assim utilizando-se do método dedutivo de abordagem e da técnica de pesquisa bibliográfica e documental, esse artigo analisa as condições jurídicas da Corte Internacional de Justiça atuar como foro internacional determinando a responsabilidade dos Estados pelo descumprimento das obrigações de diminuição de emissão. Para isso parte-se do primeiro precedente de responsabilidade ambiental decidido pela Corte Internacional de Justiça no caso Certain Activities Carried out by Nicaragua in the border area (Costa Rica vs. Nicaragua), demonstrando que é possível responsabilizar os Estados emissores que sequer atingem suas metas autonomamente decididas em razão do Acordo de Paris, levando-os a implicações financeiras de compensação por dano aos territórios de Estados que estão sendo encolhidos pelo aumento do nível do mar e devastados pelos extremos climáticas. Por fim demonstra-se que a litigância climática poderá ocorrer tanto em âmbito nacional proposta pelos indivíduos que sofrem com os efeitos das mudanças do clima quanto pelos Estados. Logo, a decisão da Corte Internacional de Justiça é um precedente importante no que tange a responsabilidade ambiental internacional que deverá ser levado em consideração em litígios futuros que venham a surgir sobre mudanças climáticas.

Palavras-chave: certas atividades realizadas pela Nicarágua na zona fronteiriça; Corte Internacional de Justiça; dano ambiental internacional; mudanças climáticas; responsabilidade internacional.

1 Introduction

Ever since the summit held by the United Nations for the environment and development, in Rio de Janeiro, in 1992, States have been aware of human-induced climate change and have committed to endeavor efforts to curb emissions of greenhouse gases, agreeing to have responsibilities that are common in terms of reaching such goal, yet different as to the initiatives to reach such reduction. The United Nations Framework Convention on Climate Change signed at that time was followed by the Kyoto Protocol in 1997 and the Paris Agreement in 2015. These are international law instruments that institute the duties States have towards the planet and imply a common responsibility to present and future generations.

Almost 30 years have passed and none of the targets has been met, bringing successive losses, announcing the disappearance of island states and causing irreparable damage to forests, crops and human settlements. As a reaction to little political action, several States are facing adjudication in domestic lawsuits seeking immediate action to reduce emissions of greenhouse gases. This paper analyses the problems posed in determining the legal conditions for the International Court of Justice to act as an international forum in charge of attributing responsibility to States that do not meet their emission reduction obligations in light of climate agreements. For such, we analyzed the first environmental responsibility precedent decided by the ICJ in the case of Costa Rica v. Nicaragua, demonstrating that it is possible to attribute responsibility to States carrying out emissions and that do not meet the autonomously decided targets of the Paris Agreement, hence leading them to financial implications arising from the compensation for damage to the territory of States undergoing territorial reduction as a result of increasing sea levels and devastated by climate extremes.

The responsibility[1] of the State for environmental damage recognized by the decision of the International Court of Justice in the case Certain Activities Carried out by Nicaragua in the border area (Costa Rica v. Nicaragua) and the extension of such responsibility as to the extinction of States as a result of increasing sea levels, and the consequences to nationality and territory is feasible and may encourage States to act in a more expeditious and diligent manner in order to curb emissions of greenhouse gases. In the case of Costa Rica v. Nicaragua, the Court recognized Nicaragua's responsibility and ordered the reparation of the environmental damage to Costa Rica. The theme is justified as the commitments undertaken by States to mitigate the effects of climate change stipulate that signatory States must present their targets of reduction of greenhouse gas emissions according to their national realities. However, a provision for reparation of loss and damage arising from climate change is only included in the Paris Agreement, as of 2015. Thus, the legal provision

[1] The terms 'responsibility' and 'liability' are used in this text applying their broadest meanings, not bound to the meanings ascribed by the International Law Comission of the United Nations (responsibility for wrongful acts and liability for lawful activities, respectively). For further reference, see: BARBOZA, Julio. *The environment, risk and liability in international law*. Leiden, NL: Martinus Nijhoff Publishers, 2011.

of the Paris Agreement is joined by the duty to indemnify indicated by the precedent of the ICJ. The valuable contribution of the separate opinion of Judge Antonio Augusto Cançado Trindade is also noteworthy.

Having the decision issued by the ICJ in the case of Costa Rica v. Nicaragua as a starting point, as it recognized the responsibility of the State to compensate the environmental damage caused by an action that will also have consequences to climate change, once Nicaragua removed a significant amount of trees to open a canal, this paper seeks to briefly demonstrate the international commitments assumed in the area of climate change, in order to determine who may be responsible for the environmental damage leading to the extinction of states as a result of increasing sea levels and the non-compliance with targets to mitigate climate change.

Hence, applying the deductive method as well as bibliographic and documentary research, this paper is organized into two parts, in order to achieve the general objective of the research. Therefore, the starting point is focused on the analysis of the decision issued by the International Court of Justice in the case Certain Activities Carried out by Nicaragua in the border area (Costa Rica v. Nicaragua), with the aim of stressing the relevance of this decision of the Court as it inaugurates the determination of reparation of environmental damage in the international sphere, highlighting the separate opinion of Judge Antonio Augusto Cançado Trindade. The second section firstly demonstrates the state of the art and the evolution of international commitments concerning climate change, yet without the intention of presenting an exhaustive description. Outlining the state of the art of such treaties aims to demonstrate the relevance of such agreements, especially the Paris Agreement, supporting the thesis that said instruments are sufficient to determine the responsibility of States for damage caused to their peers as a result of action or omission when it comes to climate change and that the ICJ is the possible and competent jurisdiction to do so.

2 Recognition of Responsibility for Environmental Damage by the International Court of Justice

In 2018, the International Court of Justice (ICJ) issued a landmark decision in the case Certain Activities Carried out by Nicaragua in the border area (Costa Rica v. Nicaragua). The case basically addresses the hindering of conduction of activities, by Nicaragua, that resulted in increased environmental damage to the territory of Costa Rica. Once the activity was conducted, Costa Rica required the Court to recognize the responsibility of Nicaragua and award damages for the breach of the duty to avoid environmental damage.

Costa Rica alleged a violation of territorial sovereignty, as Nicaragua's actions breached Costa Rica's right not to have its territory 'flooded or damaged in any other way […] as well as having regard to contemporary standards of international environmental protection'[2].

When deciding on the provisional measures in 2015, the International Court of Justice acknowledged that Nicaragua had substantive obligations concerning transboundary harm.

> 113. The Court has already found that Nicaragua is responsible for the harm caused by its activities in breach of Costa Rica's territorial sovereignty. What remains to be examined is whether Nicaragua is responsible for any transboundary harm allegedly caused by its dredging activities which have taken place in areas under Nicaragua's territorial sovereignty, in the Lower San Juan River and on its left bank.

The element affected, ab initio, is the territorial sovereignty, in light of the damage caused. This substantive motivation is especially relevant to ground claims for holding States responsible for the issuance of greenhouse gases that lead to increasing sea levels and reduction of certain territories such as Pacific islands.

The decision of 2018 is quite clear in which regards the causation between a harmful action carried out by a country and the damage to the environment in the territory of another, as well as the consequent duty to indemnify the losses.

> The summary of the judgment indicates:
>
> Claim for compensation for environmental damage.
>
> Such a claim not previously adjudicated by the Court — Damage to environment compensable under international law — Compensation may include indemnification for impairment or loss of environmental goods and services and payment for restoration — Methodology for valuation — Ecosystem

[2] INTERNATIONAL COURT OF JUSTICE. *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*: request of provisional measures by the Republic of Costa Rica. Available: https://www.icj-cij.org/en/case/150/provisional-measures. Access on: 28 jul. 2021.

> services approach advanced by Costa Rica — Replacement cost approach advanced by Nicaragua — Neither approach followed exclusively by the Court — No specific method of valuation for purposes of compensation for environmental damage prescribed by international law — The Court to be guided by principles and rules applicable to compensation[3].

In certain cases, ICJ has acknowledged the obligation to make full reparation for damage caused by wrongful acts[4] and has also stipulated that compensation is possible in cases where reparation is not clearly established, since the Pulp Mills Case[5]. What is important is to clearly demonstrate causation in light of science, resorting originally to the 1941 case decided by an international arbitration tribunal (Trail Smelter Case, US and Canada)[6], recognizably the first international case related to environmental damage.

It is important to stress that the Costa Rica v. Nicaragua case led ICJ to decide for the first time on a case involving compensation for environmental damage.

> 42. The Court is therefore of the view that damage to the environment, and the consequent impairment or loss of the ability of the environment to provide goods and services, is compensable under international law. Such compensation may include indemnification for the impairment or loss of environmental goods and services in the period prior to recovery and payment for the restoration of the damaged environment.[7]

Nevertheless, in a separate opinion, Judge Cançado Trindade understood that the position of the Court was too restrictive in a case that inaugurates the decision on reparation and compensation of environmental damage. The judge appropriately reminded that:

> 45. ...the Institut de Droit International, for its part, in its resolution on "Responsibility and Liability under International Law for Environmental Damage", - adopted in the 1997 Strasbourg session, - sustained "a broad concept of reparation" for environmental damages, "including cessation of the activity concerned, restitution, compensation and, if necessary, satisfaction". It further stated that compensation here 'should include amounts covering both economic loss and the costs of environmental reinstatement and rehabilitation" (Article 24).
>
> 46. The resolution then warned that there were environmental damages which were "irreparable or unquantifiable" damages, requiring other measures for reparation, including equitable considerations and "intergenerational equity" (Article 25). The adoption of the resolution was preceded by a long preparatory work, during which the point, inter alia, of "exemplary or punitive damages" was much discussed12, from the start in relation to "a broader framework of reparation" and to "the role of collective reparation", amidst equitable considerations.[8]

It is important to outline that, even though the decision by the ICJ is not focused on restoration, the separate opinion of Judge Cançado Trindade fundamentally contributes to future actions before the ICJ, in which regards environmental restorative justice[9].

[3] INTERNATIONAL COURT OF JUSTICE. *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*: judgment. Available at: https://www.icj-cij.org/en/case/150/judgments. Access on: 27 jul 2021.

[4] INTERNATIONAL COURT OF JUSTICE. *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*: judgment. Available at: https://www.icj-cij.org/en/case/150/judgments. Access on: 27 jul 2021. § 30.

[5] INTERNATIONAL COURT OF JUSTICE. *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*: judgment. Available at: https://www.icj-cij.org/en/case/150/judgments. Access on: 27 jul 2021. § 31.

[6] INTERNATIONAL COURT OF JUSTICE. *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*: judgment. Available at: https://www.icj-cij.org/en/case/150/judgments. Access on: 27 jul 2021. § 35.

[7] INTERNATIONAL COURT OF JUSTICE. *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*: judgment. Available at: https://www.icj-cij.org/en/case/150/judgments. Access on: 27 jul 2021. § 30

[8] INTERNATIONAL COURT OF JUSTICE. *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*: separate opinion of judge Cançado Trindade. Available at: https://www.icj-cij.org/public/files/case-related/150/150-20180202-JUD-01-01-EN.pdf. Access on: 27 jul 2021. Access on: 27 jul 2021.

[9] INTERNATIONAL COURT OF JUSTICE. *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*: judgment. Available at: https://www.icj-cij.org/en/case/150/judgments. Access on: 27 jul 2021. § 54. In a case of environmental damages like the present one, opposing Costa Rica to Nicaragua, full reparations can only be attained, in my understanding, within the framework of restorative justice. Full reparations require consideration not only of pecuniary compensation, but also - as I have already pointed out (cf. supra) - of other forms of reparation, starting with restitution, as well as satisfaction, rehabilitation, and guarantees of non-repetition of the damages caused. 55. Any compensation awarded for environmental damage is to be used for restoration. The forms of reparation in a situation of the kind would further encompass apologies, quite proper mainly in regimes of protection (cf. section VII, supra). In any case, environmental damages, in my perception, call first for restitutio in integrum; compensation comes afterwards, limited to material harm only, and aimed at restoration. 56. In the cas despèce, restorative justice is to be achieved, undoing the environmental harm caused by the excavation of the caños (2010-2011 and 2013). In its Memorial, Costa Rica specifies that the environmental harm for which it was requesting compensation related to the "quantifiable" material damage in consequence of Nicaragua's excavation of the first caño in 2010-2011 and another (eastern) caño in 2013

The construction of restorative justice is grounded on equity. In cases involving economic and scientific knowledge differences, the ICJ must apply caution when deciding on the burden of proof. Furthermore, the environmental damage impacts the right to life, which deserves greater attention than mere monetary compensation, as properly recognized by the Court in the Advisory Opinion of 08.07.1996 on the Threat or Use of Nuclear Weapons. It pondered that ‹the environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn' [10].

> Restoration of a damaged environment to its original condition may be complicated by the fact that environmental damage is often irreversible, as recognized in the aforementioned 1992 Rio de Janeiro Declaration on Environment and Development (Principle 15), while addressing liability and compensation for such damage (Principle 13). The 1992 Rio Declaration further stresses the need to give special priority to addressing environmental vulnerability (Principle 6). It further underlines the need to secure healthy human life in harmony with nature (Principle 1).

As this was the first case where ICJ addressed responsibility for environmental damage, it is possible to recognize the development of a rationale that may allow adjudication directly by States already affected by the effects of climate change caused by greenhouse gases. On the one hand, it is certain that the causation between the emissions from a State and the damage caused to another cannot be specifically determined; on the other hand, it is also certain that, once science has already recognized that the emission of such gases brings specific harmful consequences affecting everyone, and mainly and immediately coastal countries, which are more fragile in light of their economic conditions, one cannot set aside the general connection between emissions/climate extremes and the increase in sea levels.

Although past cannot be recovered, it is certain that insisting on maintaining and increasing emission levels to present rates are willful acts that must be met by accountability and due reparation and compensation. Still according to Judge Cançado Trindade: 'Obligations of doing - which are essential to restoration - assume particular importance in the consideration of reparations within the framework of regimes of protection (such as that of the environment)'[11]. In fact, even in light of the difficulties of restoring earlier levels, the imposition of reparation will lead to the cessation of the harmful activity. Cançado Trindade stresses: 'Restoration of the harmed environment can repair the damages as much as possible. Restoration measures can, with the passing of time, cease the consequences of the environmental damages.'[12]

> 14. As cases concerning environmental damage show, the indissoluble whole formed by breach and reparation has a temporal dimension, which cannot be overlooked. In my perception, it calls upon looking at the past, present and future altogether. The search for restitutio in integrum, e.g., calls for looking at the present and the past, as much as it calls for looking at the present and the future. As to the past and the present, if the breach has not been complemented by the corresponding reparation, there is then a continuing situation in violation of international law.
>
> 15. As to the present and the future, the reparation is intended to cease all the effects of the environmental damage, cumulatively in time. It may occur that the damage is irreparable, rendering restitutio in integrum impossible, and then compensation applies. In any case, responsibility for environmental damage and reparation cannot, in my view, make abstraction of the intertemporal dimension (cf. section VII, infra). After all, environmental damage has a longstanding dimension.[13]

It is deemed that the grounds of both the ICJ decision and Cançado Trindade's separate opinion establish clear arguments so that countries undergoing devastation of their territories by climate extremes and increasing sea levels seek accountability of countries with high levels of emissions that fail to comply with the reduction targets stipulated by them in the scope of the Paris Agreement.

(paras. 2.2 and 3.44(a))16."

[10] INTERNATIONAL COURT OF JUSTICE. *Threat or use of nuclear weapons*. Available at: https://www.icj-cij.org/en/case/95. Access on: 29 jul. 2021. §. 29

[11] INTERNATIONAL COURT OF JUSTICE. *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*: separate opinion of judge Cançado Trindade. Available at: https://www.icj-cij.org/public/files/case-related/150/150-20180202-JUD-01-01-EN.pdf. Access on: 27 jul 2021. Access on: 27 jul 2021. § 41.

[12] INTERNATIONAL COURT OF JUSTICE. *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*: separate opinion of judge Cançado Trindade. Available at: https://www.icj-cij.org/public/files/case-related/150/150-20180202-JUD-01-01-EN.pdf. Access on: 27 jul 2021. Access on: 27 jul 2021. § 92.

[13] INTERNATIONAL COURT OF JUSTICE. *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*: separate opinion of judge Cançado Trindade. Available at: https://www.icj-cij.org/public/files/case-related/150/150-20180202-JUD-01-01-EN.pdf. Access on: 27 jul 2021. Access on: 27 jul 2021. § 14-15.

3 State Responsibility for disappearance of other States due to increasing sea levels and the consequences concerning nationality and territory

In the Pulp Mills Case, the ICJ recognized the existence of environmental damage and the need to conduct an environmental impact assessment as a customary rule of international law, which must be applied any time it implies the exercise of any activity that may cause transborder environmental damage. As mentioned, in the Nicaragua v. Costa Rica Case, the Court went further when determining that Nicaragua had to compensate the environmental damage caused in the territory of Costa Rica.

In the case above, ICJ determined that Nicaragua recover the environmental damage caused to Costa Rica arising from deforestation to the construction of canals. The action/environmental damage in this case was visible and, to a certain extent, quantifiable in terms of territorial dimension. However, it was not possible to determine the quantity of species and the type of vegetation removed. Therefore, when it comes to environmental damage, the responsibility rationale that one who causes the damage must indemnify it is certainly more complex.

In this sense, the problem to be addressed is to determine who is responsible for the environmental damage arising from a breach of the treaties that regulate and stipulate targets to be met concerning the mitigation of climate change. Thus, this study aims to briefly outline, in a non-exhaustive manner, the main international commitments that determine targets of curbing global warming and climate change.

3.1 Universal commitments aimed at curbing adverse effects of climate change

The first steps to codify climate change were urged by evidence of atmospheric pollution and greenhouse gases, harmful to the Ozone Layer, which also composes the atmosphere. The Trail Smelter (1926-1941) Case drew attention when a copper company in Canada began to emit smoke and small particles that crossed the border, harming the environment of the neighboring country, specifically in Washington State (USA). As a result of such incident and the research proving that the emission of greenhouse gases was causing the destruction of the Ozone Layer, some international covenants have been executed: the 'Geneva Convention on Long-Range Transboundary Air Pollution' (1979), the 'Vienna Convention for the Protection of the Ozone Layer' (1985) and the 'Montreal Protocol on Substances that Deplete the Ozone Layer' (1987)[14].

Resolutions 43/53 of 1988 and 44.207 of 1989[15] of the UN General Assembly promoted the start of the work for the elaboration of the Treaty on Climate Change, ratified as the 'United Nations Framework Convention on Climate Change' in the Rio de Janeiro Conference held in 1992 (ECO-92).[16,17]

[14] The first to present a concept of 'pollution' in a multilateral normative agreement. SOARES, Guido da S. *Proteção internacional do meio ambiente*. São Paulo: Manole, 2003. p. 147.Under the following terms: art.1-b'Long-range transboundary air pollution" means air pollution whose physical origin is situated wholly or in part within the area under the national jurisdiction of one State and which has adverse effects in the area under the jurisdiction of another State at such a distance that it is not generally possible to distinguish the contribution of individual emission sources or groups of sources. '. 1979 Geneva Convention on Long-range Transboundary Air Pollution, also according to SOARES, Guido da S. Proteção internacional do meio ambiente.

[15] Resolution of the General Assembly. Protection of global climate for present and future generations of mankind - A/RES/43/53 – de 1988. "1. Recognizes that climate change is a common concern of mankind, since climate is an essential condition which sustains life on earth; [...]". UNITED NATIONS. General Assembly. *A/RES/43/53*: 70th plenary meeting, 6 December 1988: protection of global climate for present and future generations of mankind. Available at: http://www.un.org/documents/ga/res/43/a43r053.htm. Access on: 28 set. 2015; HORN, Laura. Common concern of a humankind on a human right to a healthy environment. *Mqjicel Journal*, Sydney, AU, MacQuarie University, v. 1, 2004. p. 245.

[16] The aforementioned resolutions determined that climate became a common concern of humankind' and must be preserved for future generations. Resolutions 43/53 and 44/207 also affirm there is significant evidence indicating that the concentration of greenhouse gases in the atmosphere was increasing and presented a global warning for the possible elevation of sea levels, with catastrophic effects on all mankind if failing to take measures soon and in every level. In this sense, resolutions recognized the existence of valuable studies conducted by the WMO and by the United Nations Environmental Program (UNEP) on the effects caused by climate change. NOSCHANG, Patricia G. *Direito ambiental internacional e recursos hídricos transfronteiriços*. Rio de Janeiro: Lumen Juris, 2018.

[17] The first elements for the elaboration of aforementioned convention were brought in a meeting of experts (Statement of Legal and Policy Experts on Protection of the Atmosphere), held in Ottawa in 1989 and in an IPCC report issued in 1990. In 1990 and 1991, UN General Assembly continued to work on the subject and issued two additional resolutions on climate protection for present and future generations. UNITED NATIONS. General Assembly. *A/RES/45/212*: 71st plenary meeting, 21 December 1990: protection

Negotiations with universal goals presented different opinions between states participating in the Conference, with regards to the measures to be adopted and the responsibilities to solve the problem of climate change. Divergences were not only led by developed and developing countries. It is noteworthy that since the negotiations of the 1992 Convention, the member states of the Alliance of Small Island States claimed a strict convention in its terms, due to the probability of disappearance of States such as Nauru, Vanuatu, Tuvalu, Kiribati, as a result of the increase in sea levels. On the other hand, these claims were very far from those of the member countries of the Organization of Petroleum Exporting Countries (OPEC), such as Kuwait and Iraq, which would have their economy directly affected if the consumption of fossil fuels were reduced by developed countries. None of these groups had as much in common as Brazil, China and India, which did not want to limit the growth of their economies but, at the same time, had no objection to stricter measures for developed countries[18]. While island countries struggled for survival, OPEC countries sought to secure their economy.

After fifteen months of negotiations, the United Nations Framework Convention on Climate Change was adopted and opened for signature at the Earth Summit held in Rio de Janeiro in 1992 (ECO-92)[19] and entered into force in 1994, with the participation of the majority of UN member states. In the preamble, it acknowledged that climate issues and their adverse effects are a common concern of humankind and '[…] the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response'[20], according to their common but differentiated responsibilities, considering the respective capabilities and social and economic conditions. It was observed that most global emissions of greenhouse gases originate from developed countries and there is a growing probability of an increase of emissions in developing countries, in light of the search for better social and economic conditions. Therefore, preventive measures must be adopted by the countries, endeavoring all the efforts not only to avoid the increase in emissions of greenhouse gases, but also to protect the environment as a whole, following the principle of common but differentiated responsibilities. The Convention, not by chance, invokes several times the obligations already assumed by the Member States and the measures stipulated under the Montreal Protocol.

Nevertheless, it is important to stress that right after the Framework Convention came into force, it became evident that it was not sufficient to address all the aspects involving climate change. For such reason, a new round of negotiations began with the first Conference of the Parties (COP) in 1995, in Berlin, when Parties agreed that the undertakings stipulated until then were not sufficient, and decided to elaborate more specific rules. This document, known as the Berlin Mandate, aimed at new negotiations with stricter obligations. States Parties also '[…] decided that the commitment of the developed countries to reduce their emissions to 1990 levels, until 2000, was inappropriate for reaching the long-term aim of the Convention, which consists in preventing a dangerous anthropic (human-produced) interference in the climate system.'[21]

The Kyoto Protocol was adopted at the COP-2, held in December 1997 in the city of Kyoto, Japan. In March 1998, the document was available for signature[22]. Parties

of global climate for present and future generations of mankind. Available at: http://www.un.org/documents/ga/res/45/a45r212.htm. Access on: 28 jun. 2021. Resolution 46/169 of 1991 urged the conclusion of the work of the specialized committee so that the framework convention on climate could be finished and ready to be signed during the United Nations Conference on Environment and Development, which would be held in 1992. UNITED NATIONS. General Assembly. *A/RES/46/169. 78th plenary meeting,19 December 1991*: protection of global climate for present and future generations of mankind. Available at: http://www.un.org/documents/ga/res/46/a46r169.htm. Access on: 28 jul. 2021.

[18] BIRNIE, Patricia; BOYLE, Alan; REDGWELL, Catherine. *International law and the environment*. Oxford: Oxford University Press, 2009. p. 357.

[19] SCHRIJVER, Nico. Development without destruction. *In*: SANDS, Philippe et al. *Principle of international environmental law*. 3. ed. Cambridge: Cambridge University Press, 2013. p.105; SANDS, Philippe et al. *Principle of international environmental law*. 3. ed. Cambridge: Cambridge University Press, 2013. p.105; SANDS, Philippe et al. *Principle of international environmental law*. 3. ed. Cambridge: Cambridge University Press, 2013. p. 275.; BIRNIE, Patricia; BOYLE, Alan; REDGWELL, Catherine. *International law and the environment*. Oxford: Oxford University Press, 2009. p. 356-357.

[20] UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE. *Preamble*. Available at: https://unfccc.int/sites/default/files/convention_text_with_annexes_english_for_posting.pdf. Access on: 31 jul. 2021.

[21] UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE. *Preamble*. Available at: https://unfccc.int/sites/default/files/convention_text_with_annexes_english_for_posting.pdf. Access on: 31 jul. 2021.

[22] SCHRIJVER, Nico. Development without destruction. *In*:

mutually decided to adopt a Protocol according to which Parties should:

> […] reduce their overall emissions of greenhouse gases by at least 5% below 1990 levels in the commitment period 2008 to 2012. This binding commitment promises the reversal of a historical trend of growth of emissions started in these countries around 150 years ago[23].

The Kyoto Protocol instituted three joint mechanisms for reduction of greenhouse gas emissions: (i) the Clean Development Mechanism (CDM), set forth in article 12; (ii) the joint implementation (bilateral mechanisms between Annex I Parties), as indicated in Article 6; and (iii) emissions trading (possibility of trading between Annex I countries), as stipulated in Article 17. On 16 February 2005, the Protocol came into force. The deadline stipulated in the Protocol for the reduction of greenhouse gas emissions in the atmosphere was December 2012. Negotiations to extend the deadline and later prepare a new treaty commenced in Montreal in 2005, with the definition of an ad-hoc working group in charge of the creation of additional commitments to the Kyoto Protocol[24]. Nevertheless, it was only in 2011, in the Durban COP that Parties decided to extend the application of the Kyoto Protocol.

The responsibility of controlling the effectiveness of both the Framework Convention and the Kyoto Protocol is held by the COP. It is a burdensome assignment that demands periodic meetings, constant technical revision of the emissions and accurate report analysis. In order to support the technical issues, the Conference of the Parties counts on two supplementary entities for science and technology themes, and another to implement the commitments adopted[25].

In 2015, during the COP 21 held in Paris, the Paris Agreement was negotiated and came into force in the ensuing year, stipulating new targets to be reached by the state parties. It is important to stress that the "COP Decision 1/CP.21, adopting the Paris Agreement at COP21, provides for several indicators towards a greater openness to external challenges than in the past."[26]. And it was evident for the Parties "[…] the need for a global approach to such challenges, which goes beyond the forum of meetings of Contracting Parties to the Paris Agreement, the climate COPs."[27]. The text follows the same lines of the Convention and stresses that the implementation of the agreement will consider equity and the principle of common but differentiated responsibilities and respective capabilities, in light of different national circumstances.

3.2 Consequence of violation of treaties stipulating targets to control the increase of temperatures on Earth

Among the several consequences arising from climate change is the increase in sea levels, which advances to the territory of some states, hence altering their geographic boundaries. In this sense, the increase in sea levels threatens to completely extinguish the existence of some island states located in the Pacific Ocean. Kiribati, Tuvalu, Vanuatu, Nauru and Maldives, Seychelles, Micronesia, Palau and Salomon Islands are examples of countries that may be submerged as a result of increasing sea levels.

According to an IPCC report 'sea level rise has accelerated (extremely likely) due to the combined increased ice loss from the Greenland and Antarctic ice sheets (very high confidence). Mass loss from the Antarctic ice sheet over the period 2007–2016 tripled relative to 1997–2006. For Greenland, mass loss doubled over the same period'[28].

With the special consideration that the climate change-led rise in sea level may result in the extinction of some States and consequently of some territorial and maritime borders, as well as nationalities, a question arises: if questions concerning global warming and climate

SANDS, Philippe et al. *Principle of international environmental law*. 3. ed. Cambridge: Cambridge University Press, 2013. p. 360.

[23] UNITED NATIONS. *Kyoto Protocol to the United Nations framework Convention on Climate Change*. Available at: https://unfccc.int/resource/docs/convkp/kpeng.pdf. Access on: 31 jul. 2021.

[24] OLIVEIRA, Gisela M. *Os desafios da estratégia pós-Kyoto*. Porto: Edições Universidade Fernando Pessoa, 2015. p. 12.

[25] BIRNIE, Patricia; BOYLE, Alan; REDGWELL, Catherine. *International law and the environment*. Oxford: Oxford University Press, 2009. p. 368.

[26] LJEAN-DUBOIS, Sandrine; WEMAËRE, Matthieu. *"Complex is beautiful"*: what role for the 2015 Paris agreement in making the effective links within the climate regime complex? *Revista de Direito Internacional*, Brasília, v. 14, n. 3, p. 20-29, 2017. p. 25.

[27] LJEAN-DUBOIS, Sandrine; WEMAËRE, Matthieu. *"Complex is beautiful"*: what role for the 2015 Paris agreement in making the effective links within the climate regime complex? *Revista de Direito Internacional*, Brasília, v. 14, n. 3, p. 20-29, 2017. p. 25.

[28] INTERNATIONAL panel of climate change: special report: special report on the ocean and cryosphere in a changing climate: A32. Available at: https://www.ipcc.ch/srocc/. Access on: 29 jul 2021.

change have been raised and commitments of mitigation of their effects have been adopted since the 1980s, who will be responsible for the disappearance of such States and who must compensate the losses?

Under the general theory of international responsibility of States, the Draft Articles on Responsibility of States for Internationally Wrongful Acts determines that the State that caused the loss must compensate it. As to the environmental damage, commentators[29] and precedents[30] share the same line of thought. However, responsibility in cases of environmental damage will arise from the violation of a treaty or a customary rule. 'The concept is not limited to liability for environmental damage but has a wider application in the enforcement of international obligations concerning protection of the environment and prevention of transboundary harm[31].'

The doctrine of responsibility for environmental damage was developed based on some classic cases that contributed both to its consolidation and to the case law on the matter. Cases such as Trail Smelter, Lac Lanoux, in arbitration and the Chowzow Factory Case in the 1927, in the Permanent Court of Internacional Justice[32], Nuclear Tests case in the ICJ contributed not only to the reinforce of international environmental law principles, but to the recognition of responsibility for environmental damage validated in the Pulp Mills Case of the ICJ.[33] Currently, the international responsibility of States for damages caused to third parties, as a result of pollution from their territory, is widely accepted.[34]

In general, in classic International Law, a State is responsible for the losses caused to another State when violating a customary law or international commitment, either a unilateral act, or a bilateral or multilateral agreement. There must be reparation of the damage caused, following the classic theory of strict liability. Nevertheless, when it comes to environmental damage, the mere reparation through indemnification is not sufficient and there lies the main contribution of the Case Certain Activities Carried out by Nicaragua in the border area ordering compensation and considering intergenerational equity in the separate opinion issued by Judge Cançado Trindade.

The responsibility for environmental damage is no different: the international environmental damage generally has transboundary consequences and arises from an action or omission carried out by a State and causing harmful results to the environment of another State. This action or omission will arise from the violation of a treaty or costumary rule and may be carried out by either state or private agents, as seen in the Trail Smelter or Pulp Mills Cases[35].

It is important to stress that this work aims to apply the term responsibility with reference to wrongfulness, even though some authors and the International Law Commission sometimes apply the terms responsibility and liability. We adopt the concept coined by de Julio Barboza which reads: "responsibility for wrongfulness and liability for acts not prohibited by international law.[36]" As to the distinction between the terms liability and responsibility, Julio Barboza clarifies that "However, there is a growing tendency in United Nations legal parlance to refer to "responsibility" and "liability" as

[29] BIRNIE, Patricia; BOYLE, Alan; REDGWELL, Catherine. *International law and the environment*. Oxford: Oxford University Press, 2009. DUPUY, Pierre-Marie; VIÑUALES, Jorge E. *International environmental law*. Cambridge: [S. n.], 2018. BODANSKY, Daniel. *The art and craft of international environmental law*. Massachusetts: Harvard University Press, 2010. SANDS, Philippe et al. *Principle of international environmental law*. 3. ed. Cambridge: Cambridge University Press, 2013.

[30] INTERNATIONAL COURT OF JUSTICE. *Case concerning GABCIKBVO- NAGYMAROS Project*: separate opinion of Vice-President weeramantry. Available at: http://www.icj-cij.org/docket/files/92/7383.pdf. Access on: 23 jul. 2021; INTERNATIONAL COURT OF JUSTICE. *Pulp mills case*. Available at: http://www.icj-cij.org/docket/files/135/15877.pdf. Access on: 20 jul. 2021. INTERNATIONAL COURT OF JUSTICE. *Nuclear test*. Available at: http://www.icj-cij.org/docket/files/59/6159.pdf. Access on: 18 jul. 2021. UNITED NATIONS. Reports of international arbitral awards. *Trail smelter case (United States, Canada)*. Available at: http://legal.un.org/riaa/cases/vol_III/1905-1982.pdf. Access on: 19 jul. 2021. INTERNATIONAL COURT OF JUSTICE. *Certain activities carried out by Nicaragua in the border area (Costa Rica v. Nicaragua)*: judgment. Available at: https://www.icj-cij.org/en/case/150/judgments. Access on: 27 jul 2021.

[31] BIRNIE, Patricia; BOYLE, Alan; REDGWELL, Catherine. *International law and the environment*. Oxford: Oxford University Press, 2009. p. 214.

[32] VOIGT, Christiana. State responsibility for climate change damages. *Nordic Journal of International Law*, v. 77, p. 1–22, 2008. p. 18.

[33] INTERNATIONAL COURT OF JUSTICE. *Pulp mills case*. Available at: http://www.icj-cij.org/docket/files/135/15877.pdf. Access on: 20 jul. 2021.

[34] ANTUNES, Paulo de Bessa. Direito internacional do meio ambiente: particularidades. *Veredas do Direito*, Belo Horizonte, v. 17, n. 37, p. 263-294, 2020. p. 288.

[35] BIRNIE, Patricia; BOYLE, Alan; REDGWELL, Catherine. *International law and the environment*. Oxford: Oxford University Press, 2009. p. 214.

[36] BARBOZA, Julio. International liability for injurious consequences of acts not prohibited by international law and protection of the environment. *Collected Courses of the Hague Academy of International Law*, v. 247, 1994. p.310.

shorthand for State responsibility for wrongful acts and international liability for acts not prohibited by international law, respectively." According to the author, this may be a consequence of the work carried out by the International Law Commission where these matters are addressed in different topics and approaches and this has become so frequent that " the meaning of the terms in international law will eventually have nothing to do with their original significance."[37]

In this sense, the argument to be held is that there are obligations contained in the Paris Agreement, which was signed and ratified by the State Parties and must be complied with by them. Based on article 27 of the Vienna Convention on the Law of Treaties (1969), which stipulates that no State may invoke provisions of internal law as justification for its failure to perform a treaty, it can be concluded that the non-compliance with the targets stipulated in the Paris Agreement based on the incapacity of meeting such targets in the national scope may lead to to the international responsibility for a violation of the commitments. Furthermore, article 26 of the same document highlights the pacta sunt servanda rule. [38]

The responsibility for environmental damage in which regards climate change may be assessed either nationally[39] or internationally[40], arising from an action or omission of a State, as a result of a breach of rules and targets set in international covenants adopted by States.

It should be stressed that as to the stipulations concerning environmental damage, the advances to such theme are recent. Article 3-3 of the 1992 Climate Change Convention determines that:

3. The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties[41].

The word damage appears only once in the 1992 Convention. On the other hand, the Paris Agreement includes an article (article 8)[42] dedicated to the loss and damage associated with the adverse effects of climate change, including permanent and irreversible loss and damage. It is important to stress that there is significant advance in the Paris Agreement when including a provision where States acknowledge the existence of loss and damage arising from climate change. Furthermore, the Paris Agreement does not allow reservations, which means that any State having signed and ratified the agreement is bound to the commitment of reparation of loss and damage arising from a breach of the targets stipulated in the agreement. In other words, this is the first time a treaty on climate determines State responsibility for the reparation of losses that were not prevented, as a result of either an action or omission, and violating rules of treaties and disregarding the targets stipulated by the States themselves.

An important matter to be stressed is that there is no provision concerning the reparation of the damage caused. In this sense, it is deemed that it will be up to the so-called 'climate litigation' that may occur either nationally or internationally depending on the damage caused and the interested party filing a claim. However, when it comes to responsibility for environmental damage, it should be concluded that the simple understanding of a civil liability[43] where it suffices to indemnify the loss is

[37] BARBOZA, Julio. International liability for injurious consequences of acts not prohibited by international law and protection of the environment. Collected Courses of the Hague Academy of International Law, v. 247, 1994. p.305

[38] UNITED NATIONS. Vienna Convention of the Law of the Treaties. *Treaty Serires*, Vienna, v. 1155, 23 may 1969.

[39] NETHERLANDS. *Urgenda Foundation v. State of Netherlands*: Hague District Court: C/09/456689/HA ZA 13-1396 Judgment. 24 jun. 2015.

[40] Ioane Tetiota. UNITED NATIONS HUMAN RIGHTS COMMITTEE. Committee On Civil And Political Rights. *Views adopted by the Committee under article 5, n. 4, of the optional protocol*: concerning communication n. 2728/2016.

[41] UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE. *Preamble*. Available at: https://unfccc.int/sites/default/files/convention_text_with_annexes_english_for_posting.pdf. Access on: 31 jul. 2021.

[42] UNITED NATIONS DEVELOPMENT PROGRAM. *Paris Agreement*. Available at: https://www.undp.org/content/dam/brazil/docs/ODS/undp-br-ods-ParisAgreement.pdf. Access on: 25 jul. 2021.

[43] VIÑUALES, J. E. La distribution de la charge de protéger l'environnement: expressions juridiques de la solidarité. *In*: SUPIOT,

inadequate. As already outlined, environmental damage goes beyond monetary compensation for it harms the entire ecosystem where the damage occurred, with frequent implications involving the extinction of species, hence violating the prevention, the precautionary, and the intergenerational equity principles set forth in the Rio Declaration of 1992, as well as other international covenants. Environmental damage is directly associated with the right to life.

Once the issue of responsibility for transboundary environmental damage already acknowledged by both arbitral case law and ICJ is overcome, another question that may arise is: which is the competent jurisdiction to resolve a dispute arising from an action or omission of a State that caused or may cause transboundary environmental damage to another State? The first hypothesis is that the violation of the obligations under a treaty follows the provisions of dispute settlement mechanisms stipulated in the document executed by the parties, as in the Pulp Mills Case. If there is no treaty stipulating the dispute settlement mechanism, the choice of institutional or arbitral jurisdiction will depend on the agreement of the disputing States. Trail Smelter and Lac Lanoux Cases are examples of international arbitration involving transboundary damage.

Notwithstanding, one must question in which court should a dispute that seeks reparation for environmental damage arising from one of the treaties that stipulate targets concerning climate change be brought?

With respect to the jurisdiction of the International Court of Justice, as this study analyzed the case Certain Activities Carried out by Nicaragua in the border area decided by the ICJ, States may submit to the court '[…] all matters specially provided for in treaties and conventions in force'. In this regard, the competence of the court is sufficiently broad to analyze matters concerning international environmental law, including future climate litigation arising from the Paris Agreement.

The Paris Agreement refers to the dispute resolution system set forth in the 1992 Climate Convention, which allows the dispute to be submitted to the International Court of Justice or to arbitration[44]. The decision issued by ICJ in the case of Costa Rica v. Nicaragua is also relevant from this standpoint.

It should be stressed that the consequences of the environmental damage, in the event of the total disappearance of a State, go even beyond the typical environmental degradation, as the consequences from an international law perspective also have implications to the succession of states. Furthermore, according to the Montevideo Convention[45] and Crawford[46], among the elements for the formation and existence of a state are the territory and the permanent population. In cases of States such as Kiribati, Tuvalu, Nauru and Vanuatu, the territory will disappear – once submerged due to the rise in sea levels – and consequently the population will no longer be permanent, at least in that specific territory. The extinction of such States will bring implications to the maritime border delimitation of States neighboring such islands, as well as to the nationality of the population that will consequently become extinct once the State will no longer exist.

In this sense, one of the consequences of the threat of such island states disappearing is the migration of the national population of such countries, which feels threatened and seeks survival bringing about a new category of forced migration[47].

As to the effects and damage caused by the increase in sea levels that may result in migration, one can stress the invasion of the sea in the territory of the States, as well as the salinization of freshwater (rivers and groundwater). Hence, in the future, migrations led by the increase in sea levels may dominate the flow of climate and environmental refugees across the globe, as in the case of small low-lying island States and degraded coastal regions that concentrate high population density[48]. In this sense, the report Water and Migration: A Global Overview demonstrates there is a high rate of emigra-

Alain (ed.). *La responsabilité solidaire*. Paris: Conférences du Collège de France, 2018.

[44] Article 14 of UNFCC and Article 24 of the Paris Agreement. UNITED NATIONS DEVELOPMENT PROGRAM. *Paris Agreement*. Available at: https://www.undp.org/content/dam/brazil/docs/ODS/undp-br-ods-ParisAgreement.pdf. Access on: 25 jul. 2021.

[45] CONVENTION on the rights and duties of States. 1993.

[46] CRAWFORD, James. *The creation of states in international Law*. 2. ed. Oxford: Clarendon Press, 2007.

[47] The New York Declaration for Refugees and Migrants of 2016 and the United Nations Global Pact for Safe, Orderly and Regulat Migration of 2018 bring some references concerning migration and climate change. However, there is still no consensus of commentators and researchers about the term to be adopted: environmental refugees, climate migrants, climate refugees, among others.

[48] BROWN, Lester. *World on the edge*: how to prevent environmental and economic collapse. New York: Norton & Company/ Earth Policy Institute, 2011.

tion from Maldives and São Tomé and Príncipe. According to the document, Maldives, Kiribati and Tuvalu may demand the relocation of their entire populations to a new territory. The purchase of Kiribati lands in Fiji to relocate their people is a representative case[49].

With regard to the increase in sea levels, the consequences are even greater for the population of island countries that risk disappearing, as the State that once had a certain territorial delimitation will no longer exist, for it will be submerged. The population of such state no longer has a nationality either, as the State, the nation, the legal bond between the individual and the state will disappear.

A noteworthy decision is the one adopted by the United Nations Human Rights Committee (UNHRC) in 2020, in the case of Mr. Ioane Teiota, a national of Kiribati deported by New Zealand. The Committee clarified that people seeking asylum are not required to prove they would suffer immediate losses in case of deportation to their countries of origin, especially in climate-related events, as those may occur suddenly – such as storms or flash floods – or overtime, through processes that slowly begin – such as the increase in sea levels and land degradation. Any situation may stimulate people to seek security elsewhere. Furthermore, the members of the Committee stressed that international community must help countries adversely affected by climate change[50].

4 Final Considerations

The targets determined by the States to mitigate the effects of climate change are voluntary obligations assumed since 1992 upon the approval of the United Nations Framework Convention on Climate Change. It is deemed that States, when presenting their targets determined by the international commitments described above are effectively undertaking to meet such goals under penalty of being held responsible in the near future for the damage caused by climate change, including the permanent disappearance of certain States, the reduction of territory, and forced migration due to increasing sea levels in certain locations.

Therefore, the States affected by territorial loss as a result of increasing sea levels may seek the attribution of responsibility for environmental damage and the respective compensation. It is believed that States will seek reparation in international fora determined by international covenants, either through arbitration or before the International Court of Justice, in light of the venue clause stipulated in the Paris Agreement. Individuals may resort to what has been named climate litigation in international fora or through human rights protection mechanisms, or even before national courts, as in the Teiota case, referred above.

The responsibility of States for the violation of targets imposed by the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement may be determined by arbitration or by the International Court of Justice. In this sense, this paper sought to evidence the relevance of the unprecedented decision of the ICJ in the case Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua, which determined the responsibility of Nicaragua to compensate the environmental damage caused to the territory of Costa Rica. In addition to ICJ's decision, the paper highlighted the contribution of the separate opinion issued by Judge Antonio Augusto Cançado Trindade, who demonstrated the direct relationship between the environmental damage and the right to life of every individual in the planet, stressing the responsibility to guarantee the preservation of the environment for present and future generations.

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[50] UNITED NATIONS HUMAN RIGHTS COMMITTEE. Committee On Civil And Political Rights. *Views adopted by the Committee under article 5, n. 4, of the optional protocol*: concerning communication n. 2728/2016. p. 10-14.

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