POTENTIAL ICJ ADVISORY OPINION: DUTIES TO PREVENT TRANSBOUNDARY HARM FROM GHG EMISSIONS

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INTRODUCTION

The essence of international law since the twentieth century has been that one state's sovereignty ends where another's begins.[1] States must respect the territorial integrity of other states, and cannot violate that integrity.[2] Often acts fall clearly on one side of this line: either acts are prohibited, like Iraq invading Kuwait, or acts are allowed, like a state's right of innocent passage through the territorial waters of another state. However, the line is not always clear.[3] This line is particularly unclear in the context of the right of states to emit greenhouse gases (GHGs).

During the 67th Session of the United Nations (UN) General Assembly (GA), Palau proposed a draft GA Resolution requesting

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[1] *See, e.g.*, Montevideo Convention on the Rights and Duties of States art. 11, Dec. 26, 1933, 49 Stat. 3097, [hereinafter Montevideo Convention] ("the territory of a state is inviolable"); U.N. Charter art. 2, para. 1.; DAVID J. BEDERMAN, INTERNATIONAL LAW FRAMEWORKS 115 (3d ed. 2010) ("Territory is, in a sense, the ultimate object of international law.").

[2] G.A. Res. 2625 (XXV), U.N. GAOR, 25th Sess., Annex, U.N. Doc A/RES/25/2625 (Oct. 24, 1970) [hereinafter Declaration of Friendly Relations] (claiming that it is codifying international law, the resolution's annex states "the territorial integrity . . . of the State are inviolable"); *see also* R.R. CHURCHILL & A.V. LOWE, THE LAW OF THE SEA 10 (3d ed. 1999) (citing the adoption of the Declaration of Friendly Relations as "the most celebrated example" of certain GA resolutions being seen as codifying Customary Law).

[3] *See, e.g.*, Military and Paramilitary Activities in and Against Nicaragua (*Paramilitary Activities*) (Nicar. v. U.S.), 1986 I.C.J. 14 (June 27) (illustrating the complexity of deciding whether the U.S. actions arming rebel groups who were trying to overthrow the government in Nicaragua was illegal under international law); Corfu Channel (U.K. v. Alb.), 1949 I.C.J. 4 (Apr. 9) (describing limits of the United Kingdom to enforce its right of innocent passage by removing mines from Albanian territorial waters without permission).

that the International Court of Justice (ICJ) give an advisory opinion on the following question: "What are the obligations under international law of a State for ensuring that activities under its jurisdiction or control that emit greenhouse gases do not cause, or substantially contribute to, serious damage to another State or States?"[4] This Article explores how the ICJ might address such a GA Resolution.

The Article is divided into four parts. Part I examines the ICJ's jurisdiction, whether and how the ICJ might clarify or modify the question, and the sources of international law the ICJ would examine to answer the question. Part II examines how the ICJ might address the question what obligations do states have not to damage or seriously damage other states? Part III addresses the obligations states might have under international law to not contribute to damages in other states in ways that may fall short of being the "but for" cause of those damages. Part IV concludes with areas for further research and my opinion about what the ICJ should do.

I. ICJ AUTHORITY

A. *Introduction*

In 1945, the UN Charter created the ICJ as the principle judicial organ of the UN.[5] One way that an issue can be brought before the ICJ is that the UN GA can ask the ICJ for an advisory opinion on "any legal question."[6] However, just because the GA requests an advisory opinion does not necessarily mean that the ICJ will give an opinion addressing that exact question. Part I of this Article examines the steps between a GA request for an advisory opinion and the ICJ addressing the issue, noting the limits of that process. Specifically, Part I addresses the following issues: (1) the three components of ICJ jurisdiction, (2) the issue of ICJ "discretion" regarding advisory opinions, (3) potential ways the

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[4] Palau, Generally Assembly Resolution Requesting ICJ Advisory Opinion (2012) (draft resolution) (on file with the author). The draft resolution had major cosponsors including Germany, but due to political pressure from the United States, the resolution is not actively being pursued by the cosponsors. Interview with Stuart Beck, Ambassador, Palau Permanent Mission to the United Nations, in N.Y.C., N.Y. (Oct. 3, 2012).

[5] *The Court*, INT'L COURT OF JUSTICE, http://www.icj-cij.org/court/index.php?p1=1 (last visited May 15, 2014).

[6] U.N. Charter art. 96; *see also* I.C.J. Statute art. 65.

ICJ might clarify the legal question, (4) the sources of international law available for the ICJ to consider, and (5) how the ICJ examines facts. Part I shows that the ICJ would have jurisdiction over this question and would most likely give an advisory opinion on the issue, even if it first clarified the question.

B. *Three Components of ICJ Jurisdiction*

The ICJ has divided the question of whether it has jurisdiction to give an advisory opinion into three components.[7] Specifically, the ICJ looks at (1) whether the body is authorized to request an advisory opinion,[8] (2) whether the issue at hand is within the competence of the requesting body,[9] and (3) whether the question is a legal one.[10] This section addresses those three issues, and shows that the ICJ would have jurisdiction to give an advisory opinion.

First, the ICJ would need to determine whether the GA was a body "authorized in accordance with the UN" to make such a request.[11] While the UN Charter states that the GA may request the ICJ to give an advisory opinion on "any legal question," which suggests that the GA may request such an advisory opinion as long as the issues pass the legal question test discussed below,[12] the inquiry does not stop there. In the Legality of the Threat or Use of Nuclear Weapons (*Nuclear Weapons*) opinion, opponents of the ICJ's jurisdiction argued that Article 96, paragraph one, should be read in the context of paragraph two, which allows other organs to request advisory opinions "on legal questions arising within the scope of their activities."[13] Despite the clear textual differences

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[7] *See* Legality of the Threat or Use of Nuclear Weapons (*Nuclear Weapons*), Advisory Opinion, 1996 I.C.J. 226, ¶¶ 11–13, (July 8) (discussing three main requirements for ICJ advisory jurisdiction: a request about a 'legal question;' the request is from a competent agency authorized by the charter; and the question is within the scope of the agency's authority.).

[8] *Id*. ¶ 11 (discussing competent bodies to request advisory opinions).

[9] *Id*. ¶¶ 11–12 (discussing the GA's competence to discuss the issue at hand).

[10] *Id*. ¶ 13 (discussing the legal question requirement for advisory opinions).

[11] I.C.J. Statute art. 65, para. 1. *See also Nuclear Weapons*, 1996 I.C.J. 226, ¶ 11.

[12] U.N. Charter art. 96, para. 1.

[13] *Nuclear Weapons*, 1996 I.C.J. 226, ¶ 11 ("Some States which oppose the giving of an opinion by the Court argued that the General Assembly and Security Council are not entitled to ask for opinions on matters totally unrelated to their work. They suggested that, as in the case of organs and agencies acting under Article 96, paragraph 2, of the Charter, and notwithstanding the difference in

between Article 96 paragraph one and paragraph two, the ICJ did not decide that the GA had authority to ask for an advisory opinion about "any legal question."[14] Instead, the Court found that the issue at hand was within the scope of the GA.[15] If the court took this approach, it would need to determine whether the issue was within the scope of the GA's activities.

In the present case, the issue of states' responsibilities not to cause or contribute to transboundary harm is within the scope of the GA's authority. The GA has authority to discuss "any matters within the scope" of the Charter (except when those matters are within the Security Council's jurisdiction, as discussed below).[16] The Charter's purposes include achieving "international cooperation in solving international problems of an economic, social, cultural, or humanitarian character," based on the principle of "sovereign equality" for all members.[17] Preventing transboundary harm fits into this purpose. Furthermore, the GA "[s]hall initiate studies and make recommendations for the purpose of . . . development of international law."[18] Determining states' responsibilities not to cause or contribute to harm fits into the scope of the charter cited above. Therefore, the GA is a body authorized to request an advisory opinion on transboundary harm.

Second, in order for the ICJ to have jurisdiction over this question, the GA must have been competent to make the request.[19] Although, as discussed above, the GA has authority to request an advisory opinion about "any legal question," the ICJ sometimes discusses the GA's actions related to the issue.[20] This seems particularly relevant because the GA "shall not make any recommendation" for any dispute or situation "while the Security Council is exercising" its functions regarding that dispute or

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wording between that provision and paragraph 1 of the same Article, the General Assembly and Security Council may ask for an advisory opinion on a legal question only within the scope of their activities.")

[14] *Id*. ¶ 11 ("In the view of the Court, it matters little whether this interpretation of Article 96, paragraph 1, is or is not correct . . . .").

[15] *Id*.

[16] U.N. Charter art. 10.

[17] U.N. Charter art. 1, para. 3; *id*. at art. 2, para. 1.

[18] U.N. Charter art. 13. *See also* U.N. Charter art. 10; *Nuclear Weapons*, 1996 I.C.J. 226, ¶ 11 (discussing the G.A.'s broad authority).

[19] Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory (*About a Wall*), Advisory Opinion, 2004 I.C.J 136, ¶¶ 14–15 (July 9).

[20] *See, e.g., Id.* ¶ 16.

situation.[21] On April 17, 2007, the Security Council held a debate regarding the security implications of climate change; however, no subsequent Security Council resolution was passed.[22] The GA has exercised constant authority over climate change by holding high-level discussions and by passing resolutions, including a 2009 resolution on the possible security implications of climate change.[23] Furthermore, "a request for an advisory opinion is not in itself a 'recommendation'" about a dispute or situation for the purposes of UN Charter Article 12.[24] The ICJ will find that the GA is competent to address the issue of climate change.

Third, in order for the ICJ to have jurisdiction, the issue needs to be a legal question.[25] States that oppose ICJ jurisdiction might argue that the question posed by the GA has ethical, philosophical, moral, and political implications. For example, there are questions about whether and how per capita emissions, historical emissions, or emissions per unit GDP should play a role in determining responsibility for current causation of damages, or for determining future responsibility for emissions reductions. Opponents may also point out that, in order to answer the GA's question, the ICJ would need to make findings of fact, including what constitutes damage, and what constitutes causation. Actors fighting ICJ jurisdiction might argue that these are scientific and political questions as opposed to legal questions. These arguments will fail.

The ICJ has found that even if a legal question contains political and factual elements, the ICJ may still give an advisory opinion. For example, the ICJ found in *Western Sahara* that questions about whether a land was *terra nullius* at the time of colonization, as well as questions about the legal ties between the territory and different kingdoms, had been "framed in terms of law and raise[d] problems of international law [and thus] . . . are by

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[21] U.N. Charter art. 12, para. 1.

[22] *See* U.N. SCOR, 62nd Sess., 5663d mtg., U.N. Doc. S/PV.5663 (Apr. 17, 2007).

[23] *See* Climate Change and its Possible Security Implications, G.A. Res. 63/281, U.N. GAOR, 63rd Sess., U.N. Doc. A/RES/63/281 (June 3, 2009).

[24] *About a Wall*, 2004 I.C.J 136 at ¶ 25 (discussing potential preemption over GA by Security Council with regard to UN Charter Article 12).

[25] *Nuclear Weapons*, Advisory Opinion, 1996 I.C.J. 226, ¶ 13, (July 8) ("The Court must furthermore satisfy itself that the advisory opinion requested does indeed relate to a 'legal question' within the meaning of its Statute and the United Nations Charter.").

their very nature susceptible of a reply based in law."[26] The ICJ found that legal questions may necessarily require the determination of facts, and that it could address "legal questions" that were mixed issues of fact and law.[27] It also is irrelevant that an advisory opinion might influence an issue that is currently being debated by the GA.[28] The climate change question posed by the GA, then, is a legal question for the purposes of ICJ jurisdiction.

The ICJ has jurisdiction to address the issue of climate change through an advisory opinion if the question is posed by the GA because the three criteria of ICJ jurisdiction are met: the GA is a body authorized to request an advisory opinion, the request pertains to a legal question, and the GA is competent to make such a request with respect to climate change.

C. *"Discretion"*

Opponents of an ICJ advisory opinion might argue that this question is a political question that should not be answered by the ICJ, and that the "may" language in the ICJ statute gives the Court discretion not to issue an advisory opinion. States may argue that an ICJ advisory opinion might interfere with the United Nations Framework Convention on Climate Change (UNFCCC) process, specifically the Durban platform's roadmap towards a legally binding emissions agreement to come into force by 2020.[29] Nevertheless, the ICJ will choose to issue the advisory opinion. Furthermore, the Court has found a duty to answer such legal questions and has never declined to answer an advisory opinion where it had the requisite jurisdiction.[30] The Court would only

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[26] *Western Sahara*, Advisory Opinion, 1975 I.C.J. 12, ¶ 15 (Oct. 16). This was reaffirmed in *Nuclear Weapons*, 1996 I.C.J. 226 ¶ 13, and *About a Wall*, 2004 I.C.J. 136, ¶ 37.

[27] *Western Sahara*, 1975 I.C.J., ¶¶ 16–17.

[28] *Nuclear Weapons*, 1996 I.C.J. 226, ¶ 13 ("[T]he motives which may be said to have inspired the request and the political implications that the opinion given might have are of no relevance in the establishment of its jurisdiction to give such an opinion.").

[29] UNFCCC Conference of Parties Dec. 1/CP.17, Rep. of the Conference of the Parties, 17th Sess., Nov. 28–Dec. 11, 2011, U.N. Doc. FCCC/CP/2011/9/Add. 1, ¶¶ 2, 4, (Dec. 11, 2011) (Known as the Durban Platform, the Ad Hoc Working Group on the Durban Platform for Enhanced Action was created in 2011 to "develop a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all Parties . . . . as early as possible but no later than 2015.").

[30] *See About a Wall*, 2004 I.C.J 136, ¶ 44 ("The present Court has never, in the exercise of this discretionary power, declined to respond to a request for an

decline to address an advisory opinion for "compelling reasons."[31] The fact that a legal issue can be interpreted in a political manner, or contains political components, does not restrict the ICJ's authority over legal questions, and does not provide a "compelling reason" for the Court to decline to give an advisory opinion.[32] In this case, as long as there are clear legal questions to be answered, either posed by the GA or reformulated by the Court as discussed below, the Court would answer those legal questions.

D. *How the ICJ Might Clarify the Legal Question*

The ICJ has clarified and reformulated advisory questions that were unclear,[33] and there are two ways that the ICJ might clarify the posed climate question. First, the ICJ might decide to examine it as two separate legal questions: (1) what obligations do states have to not "cause" damage; and (2) what responsibilities do states have to not "contribute" to damage. Second, the Court might broaden the scope of the legal question to include obligations to not cause or contribute to damage outside of its jurisdiction. This reformulation would include areas not controlled by any state, such as the high seas.

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advisory opinion."). The Court did decline to give an advisory opinion to the World Health Organization, but it did so on the grounds of lacking jurisdiction and not on the grounds of exercising discretion. Legality of the Use by a State of Nuclear Weapons in Armed Conflict, Advisory Opinion, 1996 I.C.J. 66, ¶ 31 ("Having arrived at the view that the request for an advisory opinion submitted by the WHO does not relate to a question which arises 'within the scope of [the] activities' of that Organization in accordance with Article 96, paragraph 2, of the Charter, the Court finds that an essential condition of founding its jurisdiction in the present case is absent and that it cannot, accordingly, give the opinion requested.").

[31] *Nuclear Weapons*, 1996 I.C.J. 226, ¶ 14.

[32] *See About a Wall*, 2004 I.C.J 136, ¶ 58 ("Moreover, the circumstance that others may evaluate and interpret these facts in a subjective or political manner can be no argument for a court of law to abdicate its judicial task."); Certain Expenses of the United Nations, Advisory Opinion, 1962 I.C.J. 151, 155 (July 20) ("It has been argued that the question put to the Court is intertwined with political questions, and that for this reason the Court should refuse to give an opinion. It is true that most interpretations of the Charter of the United Nations will have political significance, great or small. In the nature of things it could not be otherwise. The Court, however, cannot attribute a political character to a request which invites it to undertake an essentially judicial task . . . .").

[33] *See About a Wall*, 2004 I.C.J 136, ¶¶ 37–38.

E. *ICJ Sources of International Law*

The ICJ will look to five sources of international law based on both Article 38 of the ICJ Statute and also on its past practice. The five sources of international law that the ICJ can look to are: treaty law, customary international law,[34] general principles of international law, past decisions, and academic writings.[35] In theory, past decisions and academic writings are "subsidiary means for the determination of rules of law."[36] In practice, especially as the amount of material from international tribunals has grown, the ICJ cites prior decisions—even prior non-binding advisory opinions—as evidence of international law.[37] These sources are not necessarily discrete; for example, customary international law and general principles of law might be used to interpret treaties, treaties can be seen as codification of customary international law or as evidence of *opinio juris*, and past cases are cited as evidence of customary international law.[38]

When looking for customary international law, the ICJ will need to address three issues. First, the Court will look to both *opinio juris* and state practice as evidence of customary international law. Second, the Court will also need to take a position on whether there can be persistent objectors or whether there needs to be unanimity in order to show an international customary law has formed.[39] If there are acts inconsistent with the

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[34] Customary international laws are the binding rules that form when a widespread state practice occurs along with *opinio juris* (a belief by the states that the practice represents a legal or customary obligation). *Customary International Law*, LEGAL INFO. INST., http://www.law.cornell.edu/wex/customary_international_law (last visited Feb. 28, 2014) ("*Customary international law* refers to international obligations arising from established state practice, as opposed to obligations arising from formal written international treaties. [It] can be established by showing (1) state practice and (2) opinio juris.").

[35] I.C.J. Statute art. 38.

[36] *Id.* at para. 1(d).

[37] *See, e.g.*, *About a Wall*, 2004 I.C.J 136, ¶ 41 (citing I.C.J. advisory opinions, which were themselves citing I.C.J. advisory opinions as evidence of international law).

[38] *See id.* ¶ 88 (describing how developments in customary international law led the Court to a new interpretation of obligations under the Covenant of the League of Nations); DAVID HUNTER, JAMES SALZMAN, & DURWOOD ZAELKE, INTERNATIONAL ENVIRONMENTAL LAW AND POLICY 315 (4th ed. 2011) (discussing customary international law and its relation to treaties and state practice).

[39] *See*, HUNTER ET. AL, *supra* note 38, at 309 (discussing persistent objectors).

custom, the Court will need to decide whether violations are in breach of a recognized custom, or whether they show an objection to the underlying custom. Finally, if the Court is looking at a potential evolution of customary law, it will need to decide between two views of change in customary law: either the actual law changes, or the underlying law remains the same while its application changes as norms to which it relates evolve.[40]

F. *ICJ and Facts: GHGs, Climate Change, and "Causation" of "Damages"*

1. *ICJ and Facts*

The ICJ's judgments and advisory opinions are required to contain a statement of facts,[41] although sometimes the Court takes those facts to be common knowledge or decides a case on preliminary grounds for want of jurisdiction without addressing the merits.[42] The requirement is satisfied by reference to "the instrument instituting the proceeding" for a judgment or an advisory opinion.[43] Usually the relevant facts are submitted to and accepted by the Court, which rarely conducts its own fact finding.[44]

There are several ways that facts can be submitted to the ICJ. For contentious cases, the parties are required to submit a "succinct statement of facts" when submitting the contentious claim to the Court and during their written pleadings.[45] This

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[40] For example, underlying customary law changed with the ban on the use of force after the League of Nations formed. *See* LORI FISLER DAMROSCH ET AL., INTERNATIONAL LAW 923–29 (4th ed. 2001) (discussing the state of war in international law before and after the League of Nations). By contrast, in the case of *Neer*, the underlying law preventing outrageous behavior did not change, but the accepted norms about what constituted such behavior evolved. *See* Neer (U.S.A.) v. United Mexican States, 4 R.I.A.A. 60, 61–62 (Gen. Cl. Comm'n 1926) (describing how the standard of denial of justice applied in the case, but adding additional interpretation of what would constitute such a standard).

[41] I.C.J. Rules of Court art. 95, para. 1 (judgments); *id.* at art. 107, para. 2 (advisory opinions), *available at* http://www.icj-cij.org/documents/index.php?p1=4&p2=3&.

[42] *See* Shabtai Rosenne*, Fact-Finding Before the International Court of Justice*, *in* ESSAYS ON INTERNATIONAL LAW AND PRACTICE 235, 236–37 (2009) (describing how the ICJ treats facts).

[43] *See id*. at 236 n.6.

[44] *See id.* at 238–42 (discussing how the Court usually takes the facts before it, but in several cases has turned to outside experts not presented by the parties).

[45] I.C.J. Rules of Court art. 38, paras. 1–2 (applications); *id*. at art. 49, paras. 1–2 (pleadings).

becomes complicated in contentious cases where parties decide not to argue.[46] The ICJ may also delegate individuals or bodies to carry out an inquiry or give an expert opinion,[47] but this has only been done twice.[48] For advisory opinions, "all documents likely to throw light upon the question" should be submitted with the request for the advisory opinion.[49] During advisory opinions, any state entitled to appear before the Court or any international organization is able to give written or oral statements relating to the question.[50]

In this case, the relevant facts will likely be submitted by states and international organizations such as the Intergovernmental Panel on Climate Change (IPCC.)[51] This Article assumes that the IPCC's most recent Assessment Report[52] will come in front of the Court as primary source of facts, and the Court will accept those facts as given (as they are unlikely to be disputed).[53] For this advisory opinion, the following statement of facts would be sufficient to clarify the legal obligations discussed below.

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[46] This happened in *Paramilitary Activities*, 1986 I.C.J. 14, ¶¶ 26–27 and in *About a Wall*, Advisory Opinion, 2004 I.C.J 136, ¶46 (July 9).

[47] I.C.J. Statute art. 50.

[48] Rosenne, *supra* note 42, at 236 (discussing how both instances were in *Corfu Channel*).

[49] I.C.J. Statute art. 65, para. 2.

[50] *Id.* at art. 66, paras. 2, 4.

[51] *See id.* at art. 66, para. 2 (specifying notification for parties that they may submit statements as "states" and "international organizations").

[52] The IPCC's Fourth Assessment Report was published in 2007 and IPCC's Fifth Assessment Report is being published in 2014. *Publications and Data: Reports*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#.UwTNjvaprig (last visited May 16, 2014).

[53] The IPCC is the most well-known and comprehensive meta study of climate change. The IPCC itself would very likely submit its reports or the Court would look to those as the best source of information. Since States have also agreed to the language of the IPCC reports before they are finalized, States would have trouble disputing the IPCC's report once it had been finalized. The ICJ would then take the uncontested IPCC reports as facts for this opinion. *See generally* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, http://www.ipcc.ch/ (last visited May 16, 2014).

2. *Statement of Facts*

Anthropogenic GHG emissions are causing climate change.[54] Many of the effects of climate change will happen by increased degrees and probabilities, but it will be difficult to precisely pin a causal relationship to any specific amount of GHG emissions.[55] However, GHG emissions directly cause three types of serious transboundary harm.

The first harm directly caused by GHG emissions occurs because increased GHG emissions trap heat in the atmosphere, which warms the oceans. In fact, "widespread warming has been detected in ocean temperatures" over the past 60 years due to climate change.[56] The ocean expands as it absorbs heat (thermal expansion), leading to sea level rise, which caused around half of all sea level rise since 1961.[57] Further increases in GHG emissions are predicted to cause global sea level rise up to 0.59 meters within the century.[58] This not only will destroy coastal land, but also could destroy large parts of low-lying states, including the Marshall Islands and the Maldives.[59] The complete destruction of another state's territory unquestionably violates *jus cogens*.[60] This

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[54] Intergovernmental Panel on Climate Change, *Contribution of Working Group I*, *in* CLIMATE CHANGE 2007: SYNTHESIS REPORT. CONTRIBUTION OF WORKING GROUPS I, II AND III TO THE FOURTH ASSESSEMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 665 (Pachauri, R.K and Reisinger, A. eds., 2007) [hereinafter IPCC AR4].

[55] Examples include increased droughts, flooding, decreased food security, changing disease vectors, increased severity of hurricanes and other extreme weather events, and large scale melting glaciers.

[56] IPCC AR4, *supra* note 54, at WORKING GROUP I, TECHNICAL SUMMARY, 60.

[57] The rest of the sea level rise was caused by melting ice sheets, or by unknown causes. IPCC, AR4, *supra* note 54, at WORKING GROUP I, CHAPTER 5, Table 5.3, 419.

[58] IPCC AR4, *supra* note 54, at WORKING GROUP I, SUMMARY FOR POLICY MAKERS, Table SPM.3, 13.

[59] *See* IPCC TAR, WORKING GROUP II: IMPACTS ADAPTION AND VULNERABILITY, Chapter 19, *available at* http://www.ipcc.ch/ipccreports/tar/wg2/index.php?idp=671 ("An 80-cm sea level rise could inundate two-thirds of the Marshall Islands and Kiribati. A 90-cm sea level rise could cause 85% of Male, the capital of the Maldives, to be inundated.") (internal citations omitted).

[60] *Jus cogens* is a preemptory norm that is "accepted and recognized by the international community as one from which no derogation is permitted." Examples include genocide and slavery. HUNTER ET AL., *supra* note 38, at 310.

is almost certain to occur unless global GHG emissions start falling almost immediately.[61]

The second harm caused by GHG emissions is that increasing ocean temperatures directly damage coral reef ecosystems.[62] Increases in sea surface temperatures of less than one degree Celsius can lead to coral reef bleaching, where coral reefs expel the symbiotic algae that live within the surface of the reefs, leaving them a bone white color.[63] If temperatures drop fairly quickly, the algae typically return and the coral may survive; however, if temperatures stay warm, the algae do not return, and this causes massive areas of coral reefs to die.[64] Damage to coral reef ecosystems would harm many societies: reefs are found in over 100 countries; support fisheries that supply food for over 500 million people—including 30 million who are totally dependent on coral reefs for their food and livelihoods; and generate an estimated $29.8 billion per year in related fisheries and tourism.[65] Primarily due to climate change, "15 percent are seriously threatened with loss in the next 10–20 years, and 20 percent are under threat of loss in the next 20–40 years."[66] Once the Court had sufficient facts about the value and importance of coral reef ecosystems, it would understand that potential coral reef bleaching constitutes serious damage.

Finally, increasing emissions of carbon dioxide cause significant damage through ocean acidification.[67] Carbon dioxide emissions are absorbed by the ocean,[68] which causes a chemical

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[61] *See* IPCC AR4, *supra* note 54, at WORKING GROUP III, CHAPTER 3, Table 3.5, 198 (describing the timing of emissions peaks for different emissions scenarios). Comparing those scenarios to the table of sea level rise for each scenario cited in note 57 above shows that emissions need to peak by 2015 to have a chance of keeping sea level rise below 0.20 meters.

[62] *What is Coral Bleaching?,* NOAA, http://oceanservice.noaa.gov/facts/coral_bleach.html (last visited May 15, 2014).

[63] *Id.*

[64] *Coral Bleaching: What you Need to Know*, THE NATURE CONSERVANCY, http://www.nature.org/ourinitiatives/urgentissues/coralreefs/coral-reefs-coral-bleaching-what-you-need-to-know.xml (last visited May 15, 2014).

[65] *Value of Coral Ecosystems,* NAT'L OCEANIC & ATMOSPHERIC ADMIN., http://coralreef.noaa.gov/aboutcorals/values/ (last updated Mar. 5, 2014).

[66] *Id*.

[67] Eric V. Hull, *Ocean Acidification: Legal and Policy Responses to Address Climate Change's Evil Twin*, 20 N.Y.U. ENVTL. L.J. 507, 508–21 (2014).

[68] Estimates vary and differ between different parts of the ocean. The IPCC cited an estimate that 1.6 gigatons of carbon dioxide, plus or minus 1 gigaton

process that creates a weak acid. The oceans have absorbed enough anthropogenic carbon dioxide that surface ocean pH has decreased by 30 percent between 1750 and 1994.[69] Ocean acidification reduces the concentration of useable calcium in the oceans, which harms the ability of coral reefs, lobsters, crabs, clams, and other animals to grow shells.[70] Acidification threatens to weaken these organisms or even make it impossible for them to grow.[71] The chemical processes of acidification and the damages it causes are well-understood.[72] Likewise, damages in the *Trail Smelter* case were caused by a well-understood chemical process wherein sulfur dioxide emissions reacted with water to form acid rain,[73] and the tribunal in *Trail Smelter* found this provided "clear and convincing evidence" of causation of damages to the downwind country.[74] The ICJ should similarly find that ocean acidification provides persuasive evidence of damages from carbon emissions.

There are thresholds at which major biological and physical changes to the earth begin occurring.[75] There are also tipping points where positive feedback loops will cause increased warming to become inevitable without any additional anthropogenic

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were absorbed by oceans in 1995. IPCC AR4, *supra* note 54, at WORKING GROUP I, CHAPTER 5, 403 (2007).

69 IPCC AR4, *supra* note 54, at WORKING GROUP II, CHAPTER 4, 236 (2007) (describing a decrease in pH of 0.1 corresponds to a 30 percent increase in acidity); *id.* at WORKING GROUP I, CHAPTER 5, 405 (describing evidence that a decrease in ocean surface pH of 0.1 occurred due to anthropogenic emissions between 1750 and 1994).

70 *What is Ocean Acidification?,* NAT'L OCEANIC & ATMOSPHERIC ADMIN, http://www.pmel.noaa.gov/co2/story/What+is+Ocean+Acidification%3F (last visited May 15, 2014).

71 *Id.*

72 *See* IPCC AR4, *supra* note 54, at WORKING GROUP I, CHAPTER 5, 405–06 (describing ocean acidification and changes to carbonate species).

73 Trail Smelter (U.S. v Canada), 3 R.I.A.A. 1907, 1965 (1938, 1941).

74 *Id.*

75 *See* Intergovernmental Panel on Climate Change, *Summary for Policy Makers*, *in* CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 29 (Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley eds., 2014), *available at* http://www.ipcc.ch/report/ar5/wg1/#.UwTh6vaprig. ("There is high confidence that sustained warming greater than some threshold would lead to the near-complete loss of the Greenland ice sheet over a millennium or more, causing a global mean sea level rise of up to 7 m . . . . Abrupt and irreversible ice loss from a potential instability of marine-based sectors of the Antarctic ice sheet in response to climate forcing is possible . . . .").

emissions.[76] While the precise levels of emissions that will cross these thresholds and tipping points are uncertain, it seems certain thresholds and tipping points are very close or may have already been exceeded. For example, some scientists estimate that 370 parts per million (ppm) of carbon dioxide is a threshold for coral reefs,[77] and the global yearly mean concentration of atmospheric carbon dioxide was over 392 ppm in 2012.[78] Similarly, if global temperatures reach and stay 1.1–3.8ºC above today's temperatures, then Greenland's ice sheet's melting will become "irreversible," which could raise the global sea level six meters.[79] This warming corresponds to an atmospheric concentration of carbon dioxide between 350 and 485 ppm, based on a best estimate of climate sensitivity.[80] These facts will help the ICJ determine what "serious" damage could be caused by GHG emissions and also what level of emissions will "cause" such damage.

II. RESPONSIBILITIES NOT TO CAUSE EXTRATERRITORIAL DAMAGE

A. *Restrictions of Sovereign Powers*

Sovereignty is the essence of international law, but the rights and duties it creates are evolving. The essence of sovereignty is that a state has a defined territory, a population, and a functioning government, and can interact with other states.[81] The sanctity of sovereignty is recognized by the UN Charter and customary

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[76] IPCC, CLIMATE CHANGE 2007: SYNTHESIS REPORT, 38, 46.

[77] Klaus Keller et al., *Avoiding dangerous anthropogenic interference with the climate system*, 73 CLIMATIC CHANGE 227, 232 (2005).

[78] *ESRL Data*, NAT'L OCEANIC & ATMOSPHERIC ADMIN., (May 5, 2014, 10:16 AM), ftp://aftp.cmdl.noaa.gov/products/trends/co2/co2_annmean_gl.txt. Average concentration continued to increase in 2013, and the yearly peak in May 2013 had a daily average reading above 400ppm. Justin Gillis, *Heat Trapping Gasses Pass Milestone, Raising Fears*, N.Y. TIMES, May 10, 2013, http://www.nytimes.com/2013/05/11/science/earth/carbon-dioxide-level-passes-long-feared-milestone.html?pagewanted=all.

[79] IPCC AR4, *supra* note 54, at WORKING GROUP II, CHAPTER 6, Box 6.6, 346.

[80] IPCC AR4, *supra* note 54, at WORKING GROUP III, SUMMARY FOR POLICY MAKERS, Table SPM.5, 15 (showing the atmospheric CO2 concentration associated with a global mean temperature increase of 2.0–3.2 degrees Celsius above preindustrial levels). Global temperatures increased an estimated 0.76 degrees Celsius between 1850 and 2005. IPCC AR4, *supra* note 54, at WORKING GROUP I, TECHNICAL SUMMARY, 36.

[81] Montevideo Convention, *supra* note 1, at art. 1.

international law.[82] Historically, the only limit to a state's sovereignty was its power; states could do anything they wanted to do, including going to war with other states. However, the rights and responsibilities inherent in sovereignty have evolved over the past century to increasingly limit states' rights to the extent necessary to protect the sovereignty of other states and individuals.[83] These evolving duties, discussed below, set the stage with respect to states' duties to prevent transboundary harm.

The past century has seen increasing limits on state sovereignty,[84] and, since the 1970s, states' sovereign rights to develop have arguably been limited to development that does not cause harm to other states.[85] These limits—especially the latter two—are relevant background for understanding the current issue.

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[82] U.N. Charter art 2, para. 1 ("The Organization is based on the principle of sovereign equality of all its Members."); Declaration of Friendly Relations, *supra* note 2, at annex ("All States enjoy sovereign equality . . . [which] includes the following elements: . . . b. Each State enjoys the rights inherent in full sovereignty; c. Each State has the duty to respect the personality of other States; d. The territorial integrity and political independence of the State are inviolable . . . ."). The Declaration of Friendly Relations represents general principles of customary international. *Id.* at annex, ¶ 3.

[83] *See generally* DAMROSCH ET AL., *supra* note 40, at 920–1004 (discussing changes in states autonomy related to the use of force and humanitarian intervention in the 19th and 20th centuries).

[84] For example, in the early 20th Century a state's right to use force against other states was no longer absolute: now force could only be used in situations of individual or collective self-defense *See* DAMROSCH ET AL., *supra* note 40, at 920–34 (discussing the customary international law of the use of force before the League of Nations, and how the League began to change the acceptability of the use of force, but did not completely succeed); UN Charter art. 51 ("Nothing in the present Charter shall impair the inherent right of individual or collective self-defense . . . ."). In the second half of the 20th Century States no longer had the sovereign right to engage in human rights violations, and sovereign immunity is no longer a defense for state actors who violate human rights. Increasingly, state officials have seen criminal charges or trials for human rights violations under ad hoc tribunals, or under the International Criminal Court. *See* DAMROSCH ET AL., *supra* note 40, at 1367–69 (discussing the formation of the International Criminal Court and other Tribunals as a change from the "culture of impunity") (internal citations omitted). The responsibility of states to uphold human rights has even been seen as a justification for the emerging responsibility to protect doctrine, which allows, in certain instances, a state to use force against another to state in order to prevent further internal human rights violations. Christopher Greenwood, *Humanitarian Intervention: The Case of Kosovo*, 2002 FINNISH Y.B. INT'L L. 141, 173–74 (2002) ("the resort to force in this case [intervention in Kosovo] was a legitimate exercise of the right of humanitarian intervention recognized by international law").

[85] *See infra* Part II.B.

B. *Duty to Ensure the Activities Taken Within the Jurisdiction Do Not Harm Areas Outside of That Jurisdiction*

The recognition that a country's sovereign air and land should not be "destroyed or threatened by the acts of persons beyond its control" dates back to at least 1907.[86] This principle, often known as Principle 21 of Stockholm, is that "States have, in accordance with the Charter of the United Nations and the principles of international law, . . . the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."[87] There is some debate over whether this duty is limited to "substantial" or "significant" damage, or whether the duty only provides "an obligation of performance—due diligence—rather than an obligation of result."[88] The ICJ does not need to decide for the climate change advisory opinion whether there are limits based on "substantial or significant" damage because the question posed to the Court is, what are the obligations that states have to not cause "serious" damage outside their territories? The Court will look to the sources of law available to it under Article 38 of its charter to determine whether this duty to prevent harm outside a state's jurisdiction represents international law.[89]

1. *Treaties*

The principle that states should not allow actions within their jurisdiction to cause harm to other jurisdictions[90] can be found in numerous treaty preambles, as well as in the operative text of several treaties. Treaty preambles that reference this principle

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[86] Georgia v. Tenn. Copper Co., 206 U.S. 230, 238 (1907) (granting an injunction to enjoin companies in Tennessee from releasing sulfur dioxide gas, which was causing acid rain in Georgia).

[87] Declaration of the United Nations Conference on the Human Environment, UNEP, Principle 21 (1972), *available at* http://www.unep.org/Documents.Multilingual/Default.asp?documentid=97&articleid=1503 [hereinafter Stockholm].

[88] *See* John H. Knox, *The Myth and Reality of Transboundary Environmental Impact Assessment*, 96 AM. J. INT'L L. 291, 293-94 (2002) (discussing how scholars read limits into the Principle).

[89] *See* I.C.J. Statute art. 38.

[90] The Principle is sometimes referred to as Principle 21 of Stockholm or Principle 2 of the Rio Declaration. PHILIPPE SANDS & JAQUELINE PEEL, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 190–200 (3d ed. 2012).

include: the UNFCCC,[91] the 1972 London Convention,[92] the Convention on Long-range Transboundary Air Pollution (LRTAP),[93] and the 1985 Vienna Convention.[94] The principle is also referenced in Article 3 of the Convention on Biological Diversity (CBD), in the operational text of the treaty,[95] as well as in the United Nations Convention on the Law of the Sea (UNCLOS).[96]

2. *Customary International Law*

In order to show that a practice represents customary international law, the ICJ will look to both actual state practice as well as *opinio juris*.[97] While states' ratifications of treaties may be evidence of *opinio juris*, ratified treaties do not obviate the need to look for evidence of state practice.[98] Surveying evidence of state practice to support a principle of customary international law is a massive undertaking; while courts in several instances have done this on their own, more often they rely on the work of scholars and other courts that have gathered such evidence.[99] Many scholars and courts recognize Principle 21,[100] and the International Law

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[91] United Nations Framework Convention on Climate Change [UNFCCC], May 9, 1992, S. Treaty Doc. No. 102-38, 1771 U.NT.S 31, pmbl. ("Recalling, also . . ." the principle).

[92] 1972 London Convention ("Recognizing" the principle).

[93] Convention on Long-range Transboundary Air Pollution pmbl., Nov. 13, 1979, 1302 U.N.T.S. 217 ("Considering . . . in particular principle 21 . . .").

[94] Vienna Convention for the Protection of the Ozone Layer, prmbl., March 22 1985, T.I.A.S. No. 11,097, 1513 U.N.T.S. 323, 26 I.L.M. 1529 [hereinafter Vienna Convention Ozone Layer] ("[r]ecalling . . . in particular Principle 21").

[95] *See* SANDS & PEEL *supra*, note 90 at 198 (describing how the principle is expressed in the CBD "without express limitations to matters within the scope of the Convention.").

[96] United Nations Convention on the Law of the Sea, art. 192, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS] ("States have the obligation to protect and preserve the marine environment."); *Id*., at art. 193 ("States have the sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment.").

[97] Paramilitary Actives, 1986 I.C.J. 14, ¶ 183 (citing *Continental Shelf (Libyan Arab Jarnahiriyu/Malta)*, I.C.J. REPORTS, 29–30, para. 27 (1985)).

[98] Paramilitary Activities, 1986 I.C.J. 14, ¶ 184 ("The Court must satisfy itself that the existence of the rule in the opinio juris of States is confirmed by practice.").

[99] *See, e.g.*, The Paquete Habana, 175 U.S. 677, 680–708 (1900) (relying on work of international legal scholars to provide evidence of state practice).

[100] *See infra* Part II.B.4.

Commission described supporting state practices.[101] Some scholars write that the principle is clearly customary international law supported by state practice, without giving many examples.[102] However, At at least three scholars have written about a lack of supporting state practice, including one who wrote that a strict reading of Principle 21 "does not seem to enjoy the necessary support in state practice" to be supported as a principle of customary international law.[103]

State practice includes examples that are both consistent and inconsistent with the principle of preventing transboundary harm. Acts of support include: reduction of ozone depleting substances pursuant to the Montreal Protocol to the Vienna Convention on the Protection of the Ozone Layer (Montreal Protocol), which has achieved a compliance rate of 98 percent;[104] actions under the Convention on International Trade in Endangered Species (CITES) to restrict imports of products that lead to the killing of endangered species in other countries;[105] and provisions under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal to reduce transboundary shipments of waste that could lead to environmental or human health problems.[106] Two acts seem inconsistent with preventing

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101 *See* SANDS & PEEL, *supra* note 90, at 196 ("[ILA] concluded from examination that state practice was founded upon the rule in the Trail Smelter case.") (footnote omitted).

102 *See* BEDERMAN, *supra* note 1, at 48 (state practice and *opinio juris* supported customary international law to avoid transboundary pollution); SANDS & PEEL, *supra* note 90, at 188 (Principle 2 of the Rio Declaration is "sufficiently well established . . . to reflect an international customary legal obligation").

103 Knox, *supra* note 88, at 293. *See also* Daniel Bodansky, *Customary (and Not so Customary) International Environmental Law*, 3 IND. J. GLOBAL LEGAL STUD. 105, 110–11 ("Although I am unaware of any systematic empirical study of this issue, transboundary pollution seems much more the rule than the exception in interstate relations. Pollutants continuously travel across most international borders through the air and by rivers and ocean currents."); SANDS & PEEL, *supra* note 90, at 196 ("In fact, consistent state practice [of Principle 21] is not readily discernible . . . and one is left to rely upon state practice as evidenced in particular participation in and support for treaties and other international acts.").

104 U.N. ENV'T PROGRAMME, KEY ACHIEVEMENTS OF THE MONTREAL PROTOCOL TO DATE (2012), *available at* http://ozone.unep.org/new_site/en/Information/Information_Kit/Key_achievements_of_the_Montreal_Protocol_2012.pdf.

105 *How CITES Works*, http://www.cites.org/eng/disc/how.php (last visited May 16, 2014).

106 *Overview*, BASEL CONVENTION, http://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx (last visited May 16, 2014).

transboundary harm: states have not adopted a GA Resolution accepting the International Law Commission's (ILC) views on transboundary harm,[107] and most states have failed to reduce GHG emissions.[108] Whether this second case provides an example of causing serious transboundary damage depends on fact-specific questions for each state.

State acts inconsistent with a potential customary international law may represent breaches, persistent objections, or evidence that there is not yet sufficient state practice to form customary law. It seems that, in the case of a duty to prevent transboundary harm, more scholarly work must be done to determine whether state practice supports this duty as an existing principle of customary international law.

3. *General Principles*

Both Principle 21 of Stockholm and Principle 2 of the Rio Declaration explicitly adopted avoiding transboundary harm as a general principle of international law. As discussed above, numerous treaties have explicitly adopted the principle.

4. *Cases, Arbitrations, and Scholars*

Principle 21 has support among scholars as one of the most widely accepted rules of customary international law.[109] Perhaps

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[107] The ILC's views are discussed in Part II.B.4 below. *Consideration of Prevention of Transboundary Harm from Hazardous Activities and Allocation of Loss in the Case of Such Harm (Agenda Item 83)*, GEN. ASSEMBLY OF THE UNITED NATIONS, https://www.un.org/en/ga/sixth/68/TransHarm.shtml (last visited Nov. 11, 2014).

[108] Not counting the Economies in Transition (those former Soviet countries whose emissions were reduced below 1990 baselines as a result of their collapsed economies) only four countries that committed to reducing their emissions with the Kyoto Protocol—Germany, the United Kingdom, Switzerland, and Sweden—actually reduced their emissions between 1990 and 2011. UNFCCC, "Fact Sheet: The Kyoto Protocol" pages 3–4 (2011), *available at* http://unfccc.int/files/press/backgrounders/application/pdf/fact_sheet_the_kyoto_protocol.pdf (last visited May 16, 2014). Emissions in the other 18 industrialized countries that committed to reduce emissions with the Kyoto Protocol increased between 1.9 and 52.5 percent between 1990 and 2011. *Id*. Emissions also increased in the United States, which did not commit to binding emissions reductions. *See*, Mathew L. Wald, *Energy Secretary Optimistic on Obama's Plan to Reduce Emissions*, N.Y. TIMES, June 27, 2013, http://www.nytimes.com/2013/06/28/us/politics/energy-secretary-optimistic-on-obamas-plan-to-reduce-emissions.html.

[109] *See, e.g.*, Tseming Yang & Robert V. Percival, *The Emergence of Global Environmental Law*, 36 ECOLOGY L.Q. 615, 646 (2009) ("For example, the most

the most significant academic support comes from the ILC's 2001 text, which says "[t]he State of origin shall take all appropriate measures to prevent significant transboundary harm or at any event to minimize the risk thereof."[110] However, some scholars still point to a potential lack of evidence of state practice and note that *Trail Smelter* is the only judicial example of one state being forced to pay reparations for causing transboundary harm.[111] Yet even Bodansky, one of the earliest scholars to point out a lack of evidence of state practice, acknowledges that Principle 21 is a widely recognized principle of international law.[112]

Four main international cases and arbitrations support the duty to prevent transboundary harm. Chief among them is *Trail Smelter*, which found that "no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another . . . when the case is of serious consequence and the injury is established by clear and convincing evidence."[113] This case imposes limits requiring serious injury with clear causation. In *Corfu Channel*, the Court recognized "certain general and well-recognized principles" including "every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States."[114] In *Corfu Channel*, the Court imposed a knowledge requirement.[115] In

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widely accepted environmental norm of customary international law—the 'sic utere' or transboundary harm principle."); Owen McIntyre, *The Role of Customary Rules and Principles of International Environmental Law in the Protection of Shared International Freshwater Resources*, 46 NAT. RESOURCES J. 157, 169 (2006) ("It is widely accepted that there is an obligation to prevent transboundary harm by means of pollution."); Knox, *supra* note 88, at 292 ("Treatises, textbooks, and scholars state that Principle 21 is considered to be customary international law.") (footnotes omitted).

110 Rep. of the Int'l Law Comm'n, 53d Sess., 2001, Art. 3, U.N. Doc. A/56/10; GAOR, 56th Sess., Supp. No. 10 (2001).

111 Bodansky, *supra* note 103, at 114 ("[W]riters begin by citing *Trail Smelter,* which after more than fifty years is still the only case in which a state was held internationally responsible for causing transboundary harm.") (footnotes omitted).

112 Daniel Bodansky, *May We Engineer the Climate?*, 33 CLIMATE CHANGE 309, 312 (1996) ("Most fundamentally, [as a general principle of international environmental law] it is widely accepted that states have a duty to prevent significant transboundary harm, including harm to the global commons.").

113 Trail Smelter (U.S. v Canada), 3 R.I.A.A. 1905, 1965 (1938, 1941).

114 *Corfu Channel*, 1949 I.C.J. at 22.

115 *See id.* at 18 ("The Court must examine therefore whether it has been established by means of indirect evidence that Albania has knowledge of minelaying in her territorial waters . . . .").

Nuclear Weapons, the ICJ wrote, "[t]he existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or areas beyond national control is now part of the corpus of international law relating to the environment."[116] *Nuclear Weapons* has been cited for support by at least three other ICJ decisions.[117] Some scholars cite this case as evidence that the prevention of transboundary harm is now accepted as a principle of international law.[118] However, critics point out limits to that statement, including the word "respect," and also the fact that the Court recognizes it as "part of the corpus" but does not go so far as to say that it represents a principle of customary international law.[119] Perhaps the strongest recent support comes from *Iron Rhine*, where the Court wrote that "[e]nvironmental law and the law on development . . . require that where development may cause significant harm to the environment there is a duty to prevent, or at least mitigate, such harm . . . . This duty, in the opinion of the Tribunal, has now become a principle of general international law."[120]

5. *Applying the Facts to the Law*

In order to determine obligations under this rule, a country would need to determine the damages and the cause of those damages. Two serious damages from GHG emissions are ocean acidification and ocean warming, as described above.[121]

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[116] *Nuclear Weapons,* 1996 I.C.J. 226, ¶ 29.

[117] Iron Rhine Railway (Belg. v. Neth.), Hague Ct. Rep. (Perm. Ct. Arb. 2005), ¶ 222; Pulp Mills on the River Uruguay (*Pulp Mills*) (Arg. v. Uru.), 2010 I.C.J. 14, ¶¶ 101, 193 (Apr. 20); Gabčíkovo-Nagymaros Project (Hung. v. Slovk.), 1997 I.C.J. 7, ¶53 (Sept. 25).

[118] SANDS & PEEL, *supra* note 90, at 191 (The fact that Principle 2 of Rio Declaration "reflects customary [international] law was confirmed by the ICJ's 1996 Advisory Opinion on *The Legality of the Threat or Use of Nuclear Weapons*.").

[119] *See* Knox, *supra* note 88, at 295 (discussing "respect"); Robert Esposito, *The ICJ and the Future of Transboundary Harm Disputes: A Preliminary Analysis of the Case Concerning Aerial Herbicide Spraying (*Ecuador v. Colombia*)*, 2 PACE INT'L L. REV. ONLINE COMPANION 1, 25 (2010) (discussing "corpus").

[120] Iron Rhine Railway (Belg. v. Neth.), Hague Ct. Rep. (Perm. Ct. Arb. 2005), ¶ 59.

[121] *See* IPCC TAR, Working Group II, Chapter 19, *available at* http://www.ipcc.ch/ipccreports/tar/wg2/index.php?idp=671 ("An 80-cm sea level rise could inundate two-thirds of the Marshall Islands and Kiribati. A 90-cm sea level rise could cause 85% of Male, the capital of the Maldives, to be

The ICJ will likely not take a position on what constitutes "causing" damage for the purpose of this advisory opinion; however, it may discuss some possible benchmarks. Emissions from the 49 least developed countries collectively accounted for just 0.54 percent of global GHG emissions in 2003.[122] Emissions from these countries are *de minimis* because they contribute such a small portion of global GHG emissions.[123] As a reference for what level of emissions are causing extraterritorial damage, the ICJ might look to the G-20 countries, which, in 2009, collectively accounted for 80 percent of global GHG emissions.[124] Damage cannot be avoided without emissions reductions from those countries. Perhaps the easiest way to attribute causation would be to use a market share liability scheme, where causation is attributed proportionately among countries based on their relative contributions to GHG emissions.

C. *Duties Under the Law of the Sea*

1. *States and Pollutants Covered Under UNCLOS*

The United Nations Convention on the Law of the Sea (UNCLOS) is a multilateral treaty that has been ratified by 166 states as well as the European Union (EU).[125] The United States, which has not ratified UNCLOS, considers much of the convention

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inundated.") (citations omitted); IPCC AR4, *supra* note 54, at WORKING GROUP I, SUMMARY FOR POLICY MAKERS, Table SPM.3, 13 (projecting sea level rise could be 0.59m by the end of this century).

[122] GRAMHAM SEM, THE IMPACT OF CLIMATE CHANGE ON THE DEVELOPMENT PROSPECTS OF THE LEAST DEVELOPED COUNTRIES AND SMALL ISLAND DEVELOPING STATES 6, 12 (2009), *available at* http://www.unohrlls.org/UserFiles/File/LDC%20Documents/The%20impact%20of%20CC%20on%20LDCs%20and%20SIDS%20for%20web.pdf.

[123] *See* IPCC AR4, *supra* note 54, at WORKING GROUP III, CHAPTER 3, Table 3.10, 188 (Showing emissions need to be 50 to 85% below 2000 levels by the year 2050 in order to have a probability of keeping global temperature increase to 2 degrees above preindustrial levels. Warming above two degrees threatens coral reef ecosystems. Cutting global emissions by less than 1% of 2003 levels seems *de minimus* compared with these necessary emissions reductions.).

[124] U.N. ENVIRONMENT PROGRAMME, GLOBAL GREEN NEW DEAL: AN UPDATE FOR THE G20 PITTSBURGH SUMMIT 1 (2009), *available at* http://www.unep.ch/etb/publications/Green%20Economy/G%2020%20policy%20brief%20FINAL.pdf.

[125] U.N. Div. for Ocean Affairs and the Law of the Sea, Chronological lists of ratifications of, accessions and successions to the Convention and the related Agreements as at 29 October 2013, http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm (last updated Sept. 20, 2013).

to be customary international law.[126] UNCLOS creates broader and more specific duties to prevent extraterritorial damage then the duties that stem from Principle 21.

The wide scope of UNCLOS stems from examining its definition of "pollution of the marine environment" that means:

> the introduction by man, directly *or* indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.[127]

The term "introduction . . . indirectly" must be interpreted in the context of the treaty's text.[128]

The term "pollution of the marine environment" easily applies to GHGs generally and carbon dioxide specifically. Carbon dioxide qualifies as marine pollution because it is a substance indirectly introduced into the ocean, which results in acidification that harms marine life and threatens fisheries. The definition of "pollution of the marine environment" could also apply to GHGs generally because it includes "introduction by man, directly or indirectly, of substances or energy."[129] There are several types of energy that this would likely cover: nuclear energy, sound or noise pollution, and heat.[130] Lacking any further explanation from the

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126 *See* BEDERMAN, supra note 1, at 126 ("The United States's position is that most (but not all) of the provisions . . . reflect customary international law.").

127 UNCLOS, *supra* note 96, at art. 1, ¶ 4 (emphasis added).

128 Vienna Convention on the Law of Treaties, art. 31, ¶¶ 1, 2, 4, 23, 1155 U.N.T.S. 331, May 23, 1969. The text shows a clear intent that marine pollution applies to emissions that travel through the atmosphere. The obligations discussed in Part II.C.2 below apply to "all sources of pollution of the marine environment . . . especially those [harmful substances] which are persistent, from land-based sources, from or through the atmosphere or by dumping." UNCLOS, *supra* note 96, at art. 194, ¶ 3 (emphasis added). Furthermore, "States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from or through the atmosphere." *Id.* at art. 212, ¶ 1.

129 *Id.* at art. 1, ¶ 4 (emphasis added).

130 The word radioactive does not appear in the convention, and the word nuclear only appears in articles 22–23. UNCLOS *supra* note 96, (discussing nuclear-powered ships or ships "carrying nuclear or other inherently dangerous or noxious substances"). The word noise does not appear in the convention, and sound does not occur in relation to sound pollution. The words climate, greenhouse, and heat do not occur in the convention either. The only other two references to energy in the Convention relate to producing energy from the

Convention, the Court would likely turn to the ordinary meaning of the text.[131] The plain meaning of energy undoubtedly includes heat. GHG emissions are harmful precisely because they trap heat in the atmosphere, and much of the heat from the atmosphere is absorbed into the oceans.[132] Therefore, anthropogenic emissions of GHGs introduce energy (as heat) into the marine environment. If the Court determines that carbon dioxide and other GHG emissions fall under the definition of "pollution of the marine environment," then it will next determine what duties states have to prevent such pollution.

2. *States' Duties Under UNCLOS*

States have an affirmative duty under UNCLOS (and perhaps under customary international law, for those provisions that codify custom),[133] "to protect and preserve the marine environment."[134] To that end, "States shall take . . . all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities."[135] As discussed above, obligations to reduce or prevent pollution of the marine environment extend to measures to prevent GHG emissions that lead to indirect heat pollution of the marine environment, as well as carbon dioxide emissions that directly acidify the marine environment. Furthermore, "States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment . . . ."[136] This duty clearly applies to carbon dioxide emissions. Some states might argue that damage from heat trapped by GHGs is not "caused" by "pollution arising from" their activities because the heat itself, unlike the

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ocean, *id.* at art. 56, ¶ 1.a, and ships carrying the flag of the Atomic Energy Agency, *id.* at arts. 92–93.

131 Vienna Convention on the Law of Treaties, art. 31, ¶1, May 23, 1969, 1155 U.N.T.S. 331.

132 IPCC AR4, *supra* note 54, at WORKING GROUP 1, CHAPTER 5, 392–93.

133 It is beyond the scope of this note to examine which provisions of UNCLOS represent customary international law; however it is something ICJ should do when answering this question. SANDS & PEEL, *supra* note 90, at 373 (stating section 207 "now reflects rules of customary international law")

134 UNCLOS, *supra* note 96, at art. 192.

135 *Id.* at art. 194, ¶ 1.

136 *Id.* at art. 194, ¶ 2.

GHGs, is not clearly pollution arising from the states. However, this is a weak argument when viewed in the context of the Convention's broad, inclusive language, which declares that "states shall take all measures necessary" to prevent damage by pollution, including pollution through the atmosphere.[137] Moreover, the definition of pollution of the marine environment includes "indirect" introduction by man; it therefore follows that efforts to reduce "pollution of the marine environment" would include efforts to reduce indirect pollution. Thus, states have an obligation to reduce GHG emissions to the extent necessary to not cause damage to other states.

In addition to these general obligations, states have specific obligations under UNCLOS to prevent pollution of the marine environment from or through the atmosphere.[138] UNCLOS requires states to "adopt laws and regulations to prevent, reduce and control" pollution; such laws and regulations must be "applicable" to their sovereign air space, as well as to "vessels flying their flag or vessels or aircraft of their registry."[139] It also requires states to take other non-legal measures "as may be necessary to prevent, reduce and control" marine pollution that otherwise might be introduced through the atmosphere.[140] States also have duties to "prevent, reduce, and control" the pollution of the marine environment from land-based sources; this requires states to adopt and enforce "laws and regulations"[141] as well as to take non-legal measures prevent marine pollution from land-based sources.[142] The Court would need to determine the extent of the obligations described above.

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137 *Id.* at art. 194, ¶ 2.

138 The affirmative duties discussed in this section all come from Part XII of the convention "Protection and Preservation of the Marine Environment." UNCLOS *supra* note 96, at pt. 12. Yet the extent of these obligations, as discussed in the paragraph below, is debatable.

139 UNCLOS, *supra* note 96, at art. 212, ¶ 1. The extent of the obligations "applicable" to a state's air space is ambiguous, and this is discussed further in the paragraph below.

140 *Id.* at art. 212, ¶ 2. This creates a duty for states whose laws and regulations do not prevent pollution of the marine environment through the atmosphere to take additional actions. Additional measures that "may be necessary" under this duty could include: funding of clean energy sources, funding research and development, or reducing subsidies on fossil fuels.

141 The duty to adopt and the quoted text come from *id.* at art. 207, ¶ 1. The duty to enforce comes from *id.* at 213.

142 *Id.* at art. 207, ¶ 2. This is also relevant because, according to Sands and Peel, section 207 "now reflects rules of customary international law." SANDS &

If states have obligations to prevent marine pollution from the atmosphere or land-based sources, and if carbon dioxide and other GHGs fall under the definition of "pollution of the marine environment" as discussed above, do states have an obligation to prevent carbon dioxide and other GHGs from polluting the marine environment? On one hand, UNCLOS Article 212 discusses preventing pollution through the atmosphere is "applicable" to states' "sovereign air space," and to vessels flying their flag.[143] This could be seen as limiting the provision to atmospheric pollution only from vessels and airplanes within its airspace, whether under the territorial state's flag or another flag. If this interpretation were accepted, then under the atmospheric control duties, states would only have a duty to reduce carbon dioxide and other GHGs from airplanes and vessels. Alternatively, "applicable to the airspace under their sovereignty" could be interpreted broadly as applying to emissions from airplanes as well as emissions from other sources such as cars and power plants. This interpretation would apply to any source of GHG emissions from a country that emits pollution into its airspace.

The Court would also need to decide whether pollution of the marine environment from "land-based" sources includes GHG emissions from the country. Applying the plain meaning of marine pollution (introduced "directly or indirectly"),[144] it seems that GHG emissions from a car or factory would fall under a "land-based" source of marine pollution. Countries arguing that such emissions should not be covered might point to the language in that article describing land-based sources as "including rivers, estuaries, pipelines and outfall structures,"[145] to show that land-based pollution was meant to cover water runoff, but not atmospheric pollution.

When there is doubt interpreting text in a treaty, such as marine pollution "through the atmosphere" or "land-based," the Court will turn to the larger context, including the purpose and preamble of the treaty.[146] Reading either atmospheric or land-based marine pollution in the context of the whole treaty supports

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PEEL, *supra* note 90, at 373. If this were true, even states which have not ratified UNCLOS might have obligations under customary law to fulfill these requirements.

143 UNCLOS, *supra* note 96, at art. 212, ¶ 1.

144 *Id.* at art. 1, ¶ 4.

145 *Id.* at art. 207, ¶ 1.

146 Vienna Convention Ozone Layer, *supra* note 94, art. 31, ¶¶ 1, 2, 4.

the conclusion that these duties should apply to carbon dioxide and other GHG emissions. Three pieces of evidence support this conclusion. First, looking at the statutory construction, the obligations for the protection and preservation of the marine environment all fall under Part XII of UNCLOS. Part XII states that "[t]he measures taken pursuant to this Part shall deal with all sources of pollution of the marine environment."[147] In case "all sources" was seen to be ambiguous, it continues that the states shall include measures "designed to minimize to the fullest possible extent: (a) the release of toxic, harmful or noxious substances, especially those which are persistent, from land-based sources, from or through the atmosphere or by dumping."[148] Greenhouse gas emissions are harmful, persistent substances that fit this description. The second piece of evidence that UNCLOS duties to prevent pollution apply to GHGs and carbon dioxide emissions is that "measures taken in accordance with this Part shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life."[149] Controlling land-based GHG emissions and those that travel through the airspace of states is necessary to protect coral reef ecosystems from ocean warming and acidification.[150] It would undermine the purpose of Part XII of UNCLOS to prevent most forms of marine pollution but allow a major source of marine pollution that threatens to destroy entire ecosystems. Finally, the broad definition of "pollution of the marine environment"[151] found in Article 1 further supports the purpose of avoiding likely deleterious effects. An interpretation of Part XII that excludes GHG emissions as land-based or atmospheric marine pollutants would contradict the purpose of the treaty and undermine efforts taken pursuant to the treaty to reduce marine pollution.

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147 UNCLOS, *supra* note 96, at art. 194, ¶ 3 (emphasis added).

148 *Id.* at art. 194, ¶ 3(a), (emphasis added).

149 *Id.* at art. 194, ¶ 5.

150 *See* IPCC AR4, *supra* note 54, at WORKING GROUP II, CHAPTER 16, 698 (discussing how climate change and ocean acidification threaten coral reefs). Reductions are needed because most of that is caused by anthropogenic GHG emissions through the atmosphere. IPCC AR4, *supra* note 54, at Working Group II, Technical Summary, 28 ("The uptake of anthropogenic carbon since 1750 has led to the ocean becoming more acidic, with an average decrease in pH of 0.1 units.") (citation omitted).

151 *See supra* Part II.C.1.

After the Court decides that carbon dioxide and other GHG emissions constitute marine pollution, it can examine states' specific obligations regarding fulfillment and enforcement of their duties. States have an obligation to enforce the laws and regulations created under Article 212,[152] and "States are responsible for the fulfillment of their international obligations concerning the protection and preservation of the marine environment."[153] This highlights that states have an affirmative duty to undertake measures necessary to prevent and reduce GHG emissions. Finally, states have a responsibility to allow recourse through their legal systems for damage to the marine environment caused by natural or legal people within their jurisdictions.[154]

3. *Scope of Damage Protected Under UNCLOS*

There are four important ways that the definition of marine pollution in UNCLOS goes further in scope than Principle 21. First, UNCLOS includes both indirect pollution and heat. Second, UNCLOS contains duties not only to avoid "causing" damage, but also covers acts that are "likely to result in"[155] damage. Third, UNCLOS includes preventing not just "damage" but also "deleterious effects," such as harm to marine resources or organisms, and reduction of amenities.[156] These deleterious effects could fall well below the "damage" standard of Principle 21,[157] which would mean that UNCLOS provides more protection. Finally, UNCLOS covers damage to the marine environment, including to living organisms that are not necessarily in any state's territory.[158] Principle 21 says that states have an obligation not to damage areas outside their control; while that technically includes areas outside the territory of all states, much discussion and many cases have, in practice, revolved only around causing damage to another state.

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152 UNCLOS, *supra* note 96, at art. 222.
153 *Id.* at art. 235, ¶ 1.
154 *Id.* at art. 235, ¶ 2.
155 *Id.* at art. 1 ¶ 4 (emphasis added); art. 194,¶ 1.
156 *Id.* at art. 1, ¶ 4.
157 Stockholm, *supra* note 87.
158 *See* UNCLOS, *supra* note 96, at art. 116–20, (discussing duties to protect living resources on the high seas, which is an area beyond national territory).

4. *Applying the Law to the Facts*

States have an affirmative duty under UNCLOS to take "all measures . . . that are necessary" using "the best practicable means at their disposal" to reduce carbon dioxide and other GHGs, as long as carbon dioxide and other GHGs directly or indirectly result in, or are likely to result in, deleterious effects to the marine environment.[159] Furthermore, this duty "shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life."[160] Coral reef ecosystems are fragile and threatened;[161] thus, states "shall include those [measures] necessary to protect and preserve" coral reef ecosystems.[162]

III. RESPONSIBILITIES TO NOT CONTRIBUTE TO HARM OUTSIDE A STATE'S JURISDICTION

One major challenge in applying various rules of international law to climate change is that while many rules are set up to prevent *one* state from causing damage in an area outside of its territory, with climate change, it is not clear that any *one* state's actions are causing damage to another state. Rather, states' collective actions cause climate change. This understanding of damages may change as scientific knowledge expands, particularly regarding carbon dioxide and ocean acidification.

A. *Precautionary Principle as an Emerging Rule of International Law*

The precautionary principle is a guiding principle of international environmental law that guides how states should act when enacting conventions, yet it is not clear whether the principle has become its own rule that creates sui generis obligations on states.[163] This section examines treaties, customary international law, general principles, and cases, arbitrations, and scholars that address the precautionary principle.

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159 *See* UNCLOS, supra note 96, at art. 194, ¶¶ 1–2.

160 *Id.* at art. 194, ¶ 5.

161 *See* IPCC AR4, *supra* note 54, at WORKING GROUP II, CHAPTER 16, 698.

162 UNCLOS, *supra* note 96, at art. 194, ¶ 5.

163 *See* SANDS & PEEL, *supra* note 90, at 228 ("At the very least, precaution contributes to the interpretation of international instruments . . . .").

1. *Treaties*

Numerous treaties and declarations incorporate the precautionary principle.[164] Binding treaties that incorporate the precautionary principle include the UNFCCC[165] and the Montreal Protocol.[166] The precautionary principle is also used in treaties addressing "river pollution, [and] the European Union."[167] The precautionary principle played a central role in the "1992 Biodiversity Convention, the 2000 Cartagena Protocol on Biosafety, the transformation of what used to be called the London Dumping Convention, the adoption of the 1995 Straddling and Migratory Species Convention, the widespread protests against the shipments of ultra hazardous radioactive cargos, and the global moratorium on the harvesting of whales."[168] The precautionary principle is also incorporated into non-binding[169] declarations such as the Rio Declaration[170] and Agenda 21.[171]

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[164] The precautionary principle evades a consistent definition. *See* Jon M. Van Dyke, *The Evolution and International Acceptance of the Precautionary Principle*, *in* BRINGING NEW LAW TO OCEAN WATERS (David D. Caron & Harry N. Scheiber eds., 2004) (describing the " kaleidoscopic" nature of the definition, and the essence of the Principle).

[165] UNFCCC, *supra* note 91, at art. 3, ¶ 3 ("Parties should take precautionary measures.").

[166] Montreal Protocol on Substances that Deplete the Ozone Layer pmbl., Sept. 16, 1987, S. TREATY. DOC. NO. 100-10, 1522 U.N.T.S. 3 [hereinafter Montreal Protocol] ("Determined to protect the ozone layer by taking precautionary measures" and "[m]indful also of the precautionary measures for the protection of the ozone layer which have already been taken at the national and international levels") (emphasis omitted).

[167] *See* Russell Unger, *Brandishing the Precautionary Principle Through the Alien Torts Claims Act*, 9 N.Y.U. ENVTL. L.J. 638, 649–50 (footnotes omitted) (listing and discussing international agreements that incorporate the precautionary approach).

[168] Van Dyke, *supra* note 164, at 357–58 (footnotes omitted).

[169] United Nations Conference on Environment and Development, Rio de Janiero, Braz., June 3-14, 1992, *Agenda 21*, 3, U.N. Doc. A/CONF.151/26 (1992), *available at* http://sustainabledevelopment.un.org/index.php?page=view&nr=23&type=400 [hereinafter *Agenda 21*] ("While [the agreements in Agenda 21] lack the force of international law, the adoption of the texts carries with it a strong moral obligation to ensure their full implementation.").

[170] United Nations Conference on Environment and Development, Rio de Janiero, Braz., June 3–14, 1992, *Rio Declaration on Environment and Development*, U.N.Doc. A/CONF.151/26/REV.1 (Vol. 1), Annex I, Principle 15 (Aug. 12 1992), [hereinafter *Rio Declaration*].

[171] *See, e.g.*, *Agenda 21*, *supra* note 169 at ch. 17, ¶ 22 ("[I]t is necessary to [a]pply preventive, precautionary and anticipatory approaches so as to avoid degradation of the marine environment . . . .").

2. *Customary International Law*

State practice supports the precautionary principle as a customary international law, but it is unclear whether the *opinio juris* for the precautionary principle applies generally. Examples of state practice applying the precautionary principle in international law include "whaling, driftnet fishing, incineration of waste at sea, [and] ocean dumping of low-level radioactive wastes."[172] States explicitly invoked the precautionary principle when they addressed the potential threat of creating and enlarging a hole in the ozone layer: an international effort created the Montreal Protocol, which explicitly recognized the precautionary principle.[173] The precautionary principle has also been explicitly incorporated into national legislation in nearly two dozen developed and developing countries.[174] Widespread use of this principle in international treaties[175] is further evidence of both state practice and *opinio juris*, at least to the extent that states actually apply the precautionary principle in those specific situations. However, *opinio juris* about whether the precautionary principle is a general principle of international law differs between states.[176] The U.S. has refused to recognize the precautionary principle as a general principle of international law,[177] which could be enough to show that a general principle of customary international law has not formed. Alternatively, perhaps a custom has formed and the U.S. is

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[172] Daniel Bodansky, *May We Engineer the Climate?*, 33 CLIMATIC CHANGE 209, 219 (1996).

[173] Montreal Protocol, *supra* note 166, at pmbl., ("Determined to protect the ozone layer by taking precautionary measures"); Vienna Convention Ozone Layer, *supra* note 94, at pmbl. ("[m]indful also of the precautionary measures for the protection of the ozone layer which have already been taken at the national and international levels.") (emphasis omitted).

[174] *See* Unger, *supra* note 167, at 659–63.

[175] *See id.* at 649–50; Van Dyke, *supra* note 164, at 360–64.

[176] *See* Appellate Body Report, *European Communities—Measures Concerning Meat and Meat Products*, ¶¶ 16, 43, 123 WT/DS26/AB/R, WT/DS48/AB/R (Jan. 16, 1998) (*adopted* Feb. 13, 1998) (Compare the E.U. discussion of the precautionary principle in international law, ¶ 16 with U.S. view that it is not a "principle" but rather an "approach" to international law, ¶¶ 43, 123).

[177] *See id.* at ¶ 43 ("In the view of the United States, the claim of the European Communities that there is a generally-accepted principle of international law which may be referred to as the 'precautionary principle' is erroneous as a matter of international law. The United States does not consider that the 'precautionary principle' represents a principle of customary international law; rather, it may be characterized as an 'approach'—the content of which may vary from context to context.").

a persistent objector to being bound by the precautionary principle generally.

3. *General Principles*

The *Rio Declaration*, which lays out general principles of environmental law, proclaims that states "shall" widely apply the precautionary approach. "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."[178] Some states draw a distinction between the precautionary approach, which is viewed as a weaker recommendation, and the precautionary principle, which is viewed as a stronger principle.[179] The precautionary principle has been widely adopted.[180]

4. *Cases, Arbitrations, and Scholars*

While the precautionary principle has been raised by countries in numerous ICJ opinions and other international judicial panels, it has not been explicitly recognized by a main opinion of the ICJ as a customary principle of international law. The precautionary principle was raised or addressed by parties in ICJ opinions including the *Nuclear Weapons*, the *Pulp Mills*, and *Gabcikovo-Nagymaros Project*.[181] Although parties including New Zealand raised the precautionary principle in *Nuclear Weapons*, the Court only discussed it in a dissenting opinion.[182] The Court in *Pulp*

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178 *Rio Declaration*, *supra* note 170, at Principle 15.

179 *See* Appellate Body Report, *European Communities—Measures Concerning Meat and Meat Products*, ¶¶ 43, WT/DS26/AB/R, WT/DS48/AB/R (Jan. 16, 1998) (*adopted* Feb. 13, 1998) .

180 *See supra* Part III.A.1.

181 Gabčíkovo -Nagymaros Project, 1997 I.C.J. 7 at ¶¶ 97, 113 (Sept. 25) ("The previously existing obligation not to cause substantive damage to the territory of another State had, Hungary claimed, evolved into an *ergu omnes* obligation of prevention of damage pursuant to the 'precautionary principle'."); *Nuclear Weapons*, 1996 I.C.J. 226. Despite discussing other principles from the *Rio Declaration*, including Principle 24 in ¶ 30, the opinion does not discuss the precautionary principle, which is Principle 15 of the Rio Declaration. *See also* SANDS & PEEL, *supra* note 90, at 223 (discussing the use of the precautionary principle in *Nuclear Weapons*). *See Pulp Mills*, 2010 I.C.J. 14, ¶¶ 55, 160 (Apr. 22) (discussing Argentina's argument that the precautionary principle applied to the statutory interpretation in this case, and that the principle shifted the burden of proof).

182 *Nuclear Weapons*, 1996 I.C.J. 226; *id.* at 502. Despite discussing other principles from the *Rio Declaration*, including Principle 24, see *Nuclear Weapons*, 1996 I.C.J. 226 at ¶ 30, the opinion does not discuss the precautionary

Mills addressed the principle only briefly in describing an argument raised by Argentina, but did not say that it applied or represented a general principle of international law.[183] The WTO's appellate body summed up the acceptance of the principle:

> The status of the precautionary principle in international law continues to be the subject of debate among academics, law practitioners, regulators and judges. The precautionary principle is regarded by some as having crystallized into a general principle of customary international *environmental* law. Whether it has been widely accepted by Members as a principle of *general* or *customary international law* appears less than clear.[184]

It seems that the ICJ avoids recognizing new customary law duties if possible. In a case like this, where it would already be deciding potentially controversial issues, it is unlikely that the Court would find that the precautionary principle creates free-standing duties. However, climate change presents a compelling reason to create a free-standing duty from the precautionary principle: the Court could find a precautionary duty to take cost-effective measures to prevent catastrophic climate change despite scientific uncertainty. Perhaps the ICJ would apply the precautionary principle to duties under treaties that had already recognized the principle, such as the UNFCCC.

B. *Precautionary Principle as Applied to the UNFCCC*

The Court could apply the precautionary principle to duties arising out of the UNFCCC. The UNFCCC has near universal ratification, with 195 parties to the convention.[185] It was set up to prevent "dangerous anthropogenic interference with the climate system," and although it was envisioned to lead to subsequent Protocols with more specific commitments, it contains affirmative

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principle, which is Principle 15 of the *Rio Declaration*. *See also* SANDS & PEEL, *supra* note 90, at 223 (discussing the use of the precautionary principle in *Nuclear Weapons*).

[183] *See Pulp Mills*, 2010 I.C.J. 14, ¶¶ 55, 160 (discussing Argentina's argument that the precautionary principle applied to the statutory interpretation in this case, and that the principle shifted the burden of proof).

[184] Appellate Body Report, *European Communities—Measures Concerning Meat and Meat Products*, ¶¶ 123, WT/DS26/AB/R, WT/DS48/AB/R (Jan. 16, 1998) (*adopted* Feb. 13, 1998) (emphasis in original) (footnote omitted) (the appellate body went on to not take a position on the issue either way).

[185] *Background on the UNFCCC*, UNFCCC, http://unfccc.int/essential_background/items/6031.php (last visited May 16, 2014).

duties for states.[186] The UNFCCC also describes a version of the precautionary principle that "shall be guid[ing]" for states when acting under the UNFCCC.[187] The ICJ could decide that the principle has become a principle of international law for those treaties that have incorporated that principle. Then states would have to apply the Principle.[188] Thus, the ICJ would determine what obligations states have under the UNFCCC, applying the precautionary principle.

Under the UNFCCC, all states, taking into account their respective socio-economic abilities, have an affirmative duty to:

> Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change.[189]

In addition, each Annex I country[190] has a duty to "adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs."[191]

The precautionary principle, as described in the UNFCCC, further requires that measures taken by states should be "cost-effective . . . [and] comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors."[192] The precautionary principle dictates that

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186 UNFCCC, *supra* note 91, at art. 2.

187 *Id.* at art. 3.

188 *See* UNFCC, *supra* note 91, at art. 3, ¶ 3 (qualifying that the Principle in the UNFCCC would no longer be discretionary, stating "Parties should take precautionary measures."); Vienna Convention Ozone Layer, *supra* note 131, at art. 31, ¶ 3 (treaties must be interpreted, together with the context of "any relevant rules of international law applicable in the relations between the parties").

189 UNFCCC, *supra* note 91, at art. 4, ¶ 1(b) (emphasis added).

190 Annex I countries are the parties to the UNFCCC that committed to take a leading role in reducing their emissions. They include the industrialized countries and the former Soviet states, which are known as the Economies in Transition. These countries agreed to reduce their emissions if they ratified Kyoto. *Parties and Observers*, UNFCCC.INT, https://unfccc.int/parties_and_observers/items/2704.php (last visited May 16, 2014).

191 UNFCCC, *supra* note 91 at art. 4 ¶ 2(a) (emphasis added).

192 *Id.* at art. 3, ¶ 3.

scientific uncertainty should not prevent states from taking cost effective measures to address a problem.[193] Applying this to the UNFCCC, all states that are parties to the UNFCCC have a duty to take cost-effective measures to "address" climate change in all relevant sectors of their economies.[194]

The ICJ may define measures to "address" climate change in one of two ways. One potential definition might be that cost-effective measures to address emissions are those that reduce emissions or emissions per unit of GDP in a way that is cost-neutral or comes at an economic benefit. Globally, there are cost-effective ways of reducing billions of metric tons of GHG emissions, including increasing energy efficiency of buildings and consumer products, increasing fuel efficiency of vehicles, increasing carbon sinks, making energy intensive industries more efficient, and reducing the carbon intensity of electricity production.[195] Alternatively, the ICJ could define "cost-effective" measures as those measures that cost less than the expected damage caused by the emissions that would otherwise be emitted. Many academics have studied the "social cost of carbon" to try to calculate the "cost" to the world in damages from one ton of carbon dioxide equivalent.[196] Although there is not much agreement on the social cost of carbon, as the severity and cost of climate change impacts rise each year, calculations of the social cost of carbon are also rising.[197] The ICJ will likely not rule on the

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193 *See Rio Declaration*, *supra* note 170, at Principle 15.

194 *See* UNFCCC, *supra* note 91, at art. 4, ¶ 1(b) (emphasis added).

195 MCKINSEY & CO., REDUCING U.S. GREENHOUSE GAS EMISSIONS: HOW MUCH AT WHAT COST? 33–66 (2007) (describing numerous cost negative or cost neutral GHG abatement opportunities in the US). To give just one example of cost negative carbon reduction, Japan's All Nippon airlines has reported a 21 percent fuel savings by switching to Boeing's new carbon fiber planes. Christopher Drew & Jad Mouawad, *New Problems With Boeing 787 Revive Concerns*, N.Y.TIMES (Dec. 10, 2012), http://www.nytimes.com/2012/12/11/business/boeing-787-plane-works-to-overcome-snags.html?pagewanted=2&ref=787dreamliner.

196 *See, e.g.*, WILLIAM NORDHAUS, ESTIMATES OF THE SOCIAL COST OF CARBON: BACKGROUND AND RESULTS FROM THE RICE-2011 MODEL, (2011), *available at* http://cowles.econ.yale.edu/P/cd/d18a/d1826.pdf; INTERAGENCY WORKING GRP. ON SOCIAL COST OF CARBON, U.S. GOV'T, TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866, at 1 (2010), *available at* http://www.epa.gov/oms/climate/regulations/scc-tsd.pdf.

197 *See* INTERAGENCY WORKING GRP. ON SOCIAL COST OF CARBON, U.S. GOV'T, TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE

social cost of carbon (which is both a "political" determination based on the value we place on future generations and a determination of fact). However, the ICJ might point to several scholars' determinations of the social cost of carbon to provide a benchmark for future discussions. One possible baseline would be $38 per ton in 2015, an estimate of the social cost of carbon that the U.S. government determined for agencies to use in cost-benefit analyses for the purpose of Office of Information and Regulatory Affairs (OIRA) review.[198]

CONCLUSION

The General Assembly might pass a resolution requesting an advisory opinion about states' obligations to prevent damage from climate change under international law. If it did, the ICJ would accept jurisdiction over the question, and it would look to customary international law, treaties, general principles of law, past cases, and scholarly writings to determine states' duties. This Article has analyzed and applied the sources of law that create duties to not cause or contribute to extraterritorial harm. These duties come from the duty to prevent transboundary harm, the UNCLOS, the precautionary principle, and the UNFCCC. I have looked to these sources of law as the Court might, and analyzed the questions the Court would likely analyze.

If the United Nations stands for anything, it stands for the idea that states cannot threaten other states. It stands for the idea that the more powerful countries will help protect the weaker countries. It stands for the idea that states will come together and act in self-defense to protect the weak. If the United Nations cannot prevent dangerous climate change, then countries like the Marshall Islands that it so carefully created through the Trusteeship Council will be completely destroyed.[199] The ICJ advisory opinion should find a customary international law duty to prevent transboundary harm, and should apply it to GHG emissions. If the ICJ announces this customary norm, and states do not follow it, they would do so

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ORDER 12866, at 2, 13 (2013) (discussing changes in the science in the past several years that lead to upward revisions of the social cost of carbon).

198 *Id.* at 13 (Average values were determined using a 5, 3, and 2.5 percent discount rate, as well as a 95th percentile confidence value for using a 3 percent discount rate. These values increased over time. The $38 value is the social cost of carbon in 2007 dollars in the year 2015, using a 3 percent discount rate.)

199 *See supra* note 59 and accompanying text.

knowing they are violating the customary law. The Court may risk some legitimacy if its Advisory Opinion is openly not followed. However, I believe it risks more of its legitimacy if it says states can knowingly destroy other states without violating international law. At least, an opinion that states do have duties to prevent transboundary harm in the climate change context might create political and grassroots pressures to mitigate GHG emissions.

The ICJ's Advisory Opinion would leave crucial international law questions for another day. Could states sue other states for climate related damages?[200] Could people sue states on the theory that climate change negatively impacts human rights?[201] What if a state chose to use force under a theory of self-defense against climate change? Could carbon dioxide leading to ocean acidification be considered a chemical weapon? Could GHG emissions leading to sea level rise that destroys countries be considered a use of "force?"[202] What happens to a state's

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[200] If so, what theories of liability and compensation will be used to determine compensation? Most international environmental regimes employ strict liability, but *Corfu Channel* suggests that a country might need to have knowledge of the harm. *See* BEDERMAN, *supra* note 1, at 138–40.

[201] One particular way climate change could threaten human rights is through the arbitrary destruction of property by sea level rise and the destruction of coral reef ecosystems. The Universal Declaration on Human Rights states that "[n]o one shall be arbitrarily deprived of his property." Universal Declaration on Human Rights, G.A. Res. 217 (III) A, U.N. Doc A/RES/217(III), at art. 17, ¶ 2 (Dec. 10, 1948). Climate change may also be seen to threaten human rights generally. *See* Assoc. of Small Island States [AOSIS], Male', Republic of Maldives, *Male' Declaration on the Human Dimension of Global Climate Change*, ¶¶ 4–5 (Nov. 14, 2007), *available at* http://www.ciel.org/Publications/Male_Declaration_Nov07.pdf (requesting a report and H.C.R. debate on the effects of climate change on human rights); Human Rights Council Res. 7/23, Human rights and climate change, 7th Sess., July 14, 2008, U.N. Doc. A/HRC/7/78 (Mar. 28, 2008) (deciding to do a study and have a debate on climate change and human rights); Human Rights Council Res. 10/4, Human rights and climate change, 10th Sess., Apr. 20, 2009, U.N. Doc. A/HRC/10/29 (Mar. 25, 2009) (deciding to hold a panel discussion); Human Rights Council Res. 18/22, Human rights and climate change, 18th Sess., Oct. 17 2011, U.N. Doc. A/HRC/RES/18/22, ¶ 1 (Sept. 30, 2011) ¶ 1 (reiterating, in the operative text the "concern that climate change poses an immediate and far-reaching threat to people and communities around the world and has adverse implications for the full enjoyment of human rights").

[202] The Security Council held a high level debate on April 17, 2007 on the potential security implications of climate change. *See* U.N. SCOR, 62nd Sess., 5663d mtg. at 2, U.N. Doc. S/PV.5663 (Apr. 17, 2007). Also, the General Assembly passed a resolution on "Climate Change and its Possible Security Implications" on June 3, 2009. *See* G.A. Res. 63/281, U.N. Doc. A/RES/63/281 (June 11, 2009).

sovereignty—and to its government, its seat at the UN, and its territorial waters—if its territory is completely submerged?[203] Eventually, as the effects of climate change become more pronounced, the ICJ may be faced with all of these questions, and more.

[203] While it is clear that a state needs a defined territory in order to become a state, it is not clear that a loss of territory ends statehood. *See* Montevideo Convention, *supra* note 1, at art. 1.