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POTENTIAL CAUSES OF ACTION FOR CLIMATE CHANGE IMPACTS UNDER THE UNITED NATIONS FISH STOCKS AGREEMENT

by Dr. William C.G. Burns*

INTRODUCTION

While the international community developed institutional responses to climate change in the 1990s, through the United Nations Framework Convention on Climate Change (“UNFCCC”)¹ and the Kyoto Protocol to the UNFCCC,² these have proven to be wholly inadequate to the task. Resistance by several nations, most prominently, the United States, to mandatory reduction targets for greenhouse gas emissions led the drafters to resort instead to “constructive ambiguities” and “guidelines, rather than a legal commitment.”³ Thus, the UNFCCC merely calls on the Parties in Annex I (developed countries and economies in transition) to “aim” to return their emissions back to 1990 levels.⁴

This article examines a potential international forum in which the threat of climate change might be addressed, specifically the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea (“UNFSA”).⁵ Actions to address climate change under UNFSA could be salutary for several reasons. First, the commercial fisheries sector may be profoundly and adversely affected by climate change. This includes many fish stocks regulated under UNFSA: highly migratory species, which have wide geographic distribution and undertake significant migrations,⁶ and straddling stocks, which occur both within and beyond Exclusive Economic Zones (“EEZs”).⁷ Second, the United States, both the world’s largest emitter of greenhouse gases (“GHGs”) and a State with an abject record in addressing climate change, is a Party to UNFSA, and has played an active leadership role in its implementation.⁸ UNFSA thus presents an excellent forum in which to engage the United States, as well as other major GHG emitters, including the European Union and China, on climate issues. Finally, unlike the other international fora for a where climate change actions have been pursued to date, UNFSA provides a dispute resolution mechanism with teeth.⁹

An article of this length necessarily cannot discuss all of the intricate scientific and legal issues that an action of this nature

would invoke; rather, it seeks to lay a foundation for further research and discussion. In this pursuit this article will: (1) outline the potential impacts of climate change on fish species, with an emphasis on the potential impacts of climate change on highly migratory fish species and straddling stocks; (2) provide an overview of UNFSA and potential actions for climate change damages under the Agreement; and (3) briefly discuss potential barriers to such actions.

URGENCY OF EXAMINING ADDITIONAL FORA TO ADDRESS GLOBAL WARMING

While the Kyoto Protocol constituted an important step forward because it established binding commitments by industrialized parties to reduce emissions,¹⁰ it by no means is a panacea to the specter of climate change. First, the United States, responsible

for 25 percent of the world’s GHG emissions, rejected the Kyoto Protocol in 2001.¹¹ While the Bush administration has touted a voluntary, technologically-driven approach,¹² the UNFCCC Secretariat recently projected that U.S. GHG emissions in 2010 will be more than 32 percent above 1990 levels, and more than 50 percent above 1990 levels by 2020.¹³ To date, the United States has failed to present a realistic scenario for stabilizing or reducing its GHG emissions.

Second, it is by no means clear that many of the Parties to the Protocol will even meet their modest commitments under Kyoto.¹⁴ Finally, the Protocol’s initial commitments constitute only an extremely modest down payment on what ultimately must be done to stabilize atmospheric concentrations of GHG emissions. Climate researchers have estimated that full implementation of Kyoto would reduce projected warming in 2050 by only about *one twentieth of one degree*.¹⁵ By contrast, stabilization of atmospheric GHGs will ultimately require the global community to reduce GHG emissions by 60 to 70 percent.¹⁶ This will necessitate industrialized countries, including the United States, committing themselves to

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reductions of as much as 80 percent by the middle of the century if developing nations are to be permitted some growth in their emissions levels.¹⁷ It will also ultimately necessitate deep cuts by large developing States with rapidly growing emissions, such as China and India.¹⁸

At this point, it is difficult to be sanguine about the prospects. While the UNFCCC Secretariat lauded the purported “Spirit of Nairobi” at the latest Conference of the Parties held in Kenya,¹⁹ in reality the Parties made very little progress developing a framework for long-term reductions in GHG emissions. Rather, the focus was on adapting to climate change impacts that increasingly seem inevitable.²⁰

The inadequacy of domestic legislation and treaty responses to climate change to date has led to a parallel commencement of judicial and quasi-judicial actions. Several actions related to climate change have been initiated in national courts and regulatory agencies in several countries,²¹ as well as two actions in international fora, the Inter-American Commission on Human Rights,²² and the World Heritage Committee.²³

THE POTENTIAL IMPACT OF CLIMATE CHANGE ON FISH SPECIES

Fish species are ectothermic (cold blooded); thus, water temperature is the primary source of environmental impact on fish, including growth and maturity rates, distribution and migration patterns, and incidence of disease.²⁴ Substantially rising oceanic temperatures throughout this century will likely have negative impacts on highly migratory and straddling stocks species in many regions, especially those near the edge of their

temperature tolerance range. For example, the range of colder water fish species, such as capelin, polar cod and Greenland halibut, is likely to shrink, resulting in a decline in abundance.²⁵ A decline in nutrient upwelling as a consequence of increased stratification between warmer surface waters and colder deep water in warming oceans could also result in a decline in big eye and yellow fin tuna in the central and western Pacific.²⁶

Warming oceans could also radically change the distribution of some straddling stock and high migratory species. For example, rising ocean temperatures could result in a shift of the distribution of herring northward, upsetting a delicate agreement in the Northeast between coastal States who harvest herring within their EEZs and distant water fishing nations who fish on the high seas.²⁷ Should cooperative management agreements collapse, it might lead to “strategic over fishing” of a stock that is currently recovering from a historical decline.²⁸ Warming in the Pacific could similarly result in a redistribution of tuna resources to higher latitudes, such as Japan and the western equatorial Pacific.²⁹

Temperature increases will also adversely affect prey species of many straddling stocks and highly migratory species. For example, in the North Atlantic, strong biogeographical shifts in copepod assemblages associated with warming trends could substantially reduce the abundance of fish in the North Sea and ultimately result in the collapse of the stocks of cod, an important straddling stock species.³⁰

There may also be direct biological effects from rising levels of carbon dioxide entering the oceans. By the end of this century, projected increases in atmospheric carbon dioxide will result in an almost threefold increase in surface ocean carbon dioxide concentrations relative to pre-industrial levels.³¹ This, in turn, could result in the average pH of the oceans falling by 0.5 units by 2100, which would translate into a three-fold increase in the concentration of hydrogen ions, making the oceans more acidic than they have been in 300 million years.³² Acidification of the oceans will result in a decrease in the concentration of carbonate and related ions that reef building and other calcifying organisms³³ draw upon to produce calcium carbonate.³⁴ Among the species that might be severely affected

are a snail species, the pteropod. In the Ross Sea, the subpolar-polar pteropod *Limacina helicina* sometimes replaces krill as the dominant zooplankton species in the ecosystem.³⁵ A recent study indicates that increased acidification of pteropod habitat in the Sea might ultimately result in the disappearance of the species from Antarctic waters, or shift its distribution to lower latitudes.³⁶ The potential exclusion of pteropods from other polar and subpolar regions could also have

negative impacts on several straddling stock species for which it is a prey species.³⁷

Given the severe impacts that climate change may have on straddling stocks and high migratory species, it is germane to next assess the prospects for enhancing their protection through the primary international legal instrument for their management and conservation.

OVERVIEW OF UNFSA

The Third United Nations Conference of the Law of Sea convened in 1973 and culminated nine years later in the adoption of the United Nations Convention on the Law of the Sea (“UNCLOS”).³⁸ UNCLOS entered into force in 1994 and currently has 148 parties.³⁹ UNCLOS consists largely of provisions for the regulation of fisheries, with an emphasis on the sovereign rights of coastal States to explore, exploit, conserve, and manage living natural resources, including fish stocks, within their respective 200-mile EEZs.⁴⁰

While many have characterized UNCLOS as “a constitution for the oceans,”⁴¹ it provides only general governing principles

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for the management of straddling stocks and high migratory species. In cases where stocks are found within the EEZs of two or more coastal States, or an EEZ and an area beyond it, UNCLOS merely requires that the pertinent fishing States “seek” to agree upon management measures either directly or through sub-regional or regional organizations.⁴² In the case of highly migratory species, coastal States and other States with nationals fishing in the region are exhorted to cooperate directly or through international organizations “with a view” to ensuring conservation and optimal utilization.⁴³ A proposal by some coastal States for an arbitration clause was beaten back by distant-water fishing nations and subsequently withdrawn.⁴⁴

The lack of binding obligations in UNCLOS for high migratory species and straddling stocks was largely attributable to the fact that fishing in these regions was not considered to be a major issue in the early 1980s.⁴⁵ However, as coastal States began to claim their rights within their EEZs, large distant-water fishing fleets were increasingly displaced from their traditional fishing grounds, placing increasing pressure on stocks on the high seas and straddling stocks.⁴⁶ This shift quickly took its toll. In 1994, the UN Food and Agriculture Organization (“FAO”) reported that straddling fish stock catches in EEZs and high seas had been declining since 1989, and that many highly migratory fish stocks, including a majority of tuna species, were depleted, in some cases, severely.⁴⁷

In 1992, the participants at the UN Conference on Environment and Development called for an intergovernmental conference under the auspices of the United Nations to address to promote effective implementation of UNCLOS provisions related to straddling stocks and highly migratory species.⁴⁸ In 1993, the UN General Assembly convened an intergovernmental conference, culminating in UNFSA. UNFSA entered into force in December of 2001 and currently has 62 Parties,⁴⁹ “including most States with significant interests in international fisheries.”⁵⁰

The Agreement’s overarching objective is to “ensure long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks.”⁵¹ The Agreement’s primary means of effectuating this is through engendering cooperation between coastal States and States fishing on the high seas, through, *inter alia*:

- Seeking agreement between coastal States and States on the high seas to agree upon necessary measures for conservation of stocks in the high seas areas and straddling stocks through direct agreements and cooperation in Regional Fisheries Management Organizations;⁵²
- Collecting and exchanging of critical data with respect to straddling stocks and highly migratory species;⁵³ and
- Expanding the duties of Flag States to ensure enforcement of and compliance with the Convention’s provisions, as well as the rights of other States, including port States, to ensure compliance with the Agreement.⁵⁴

However, the focus of UNFSA is on the relationship between coastal States and States fishing in areas beyond EEZs, there are a large number of provisions that could give rise to

claims associated with climate change impacts on straddling stocks and highly migratory species.

UNFSA AND CLIMATE CHANGE

It should be noted at the outset of this section that UNFSA adopts the well-recognized “no harm rule” of international environmental law,⁵⁵ providing that “States Parties are liable in accordance with international law for damage or loss attributable to them in regard to this Agreement.”⁵⁶ Many of the provisions of UNFSA, in turn, could provide the basis for a Party to bring an action against one or more other Parties for climate-related damages to fisheries.

As indicated above, the Agreement’s primary objective is to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory species,⁵⁷ mandating that its Parties take conservation and management measures to further this objective. While the Agreement’s primary focus is on the impacts of the harvesting of fish stocks, it clearly contemplates the regulation of other potential factors that could inflict damages on fish stocks. For example, UNFSA requires the Parties to assess the impacts of “other human activities and environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks.”⁵⁸

Moreover, the Agreement requires the Parties to “minimize pollution.”⁵⁹ While the Agreement does not define the term “pollution,” given the relationship of the agreement to UNCLOS it would seem reasonable to apply its definition of this term. In pertinent part, UNCLOS defines “pollution of the marine environment” as:

the introduction by man, directly or indirectly, of substances or energy into the marine environment . . . which results or is likely to result in such deleterious effects as harm to living resources and marine life . . . hindrance to marine activities, including fishing.⁶⁰

While rising ocean temperatures related to climate change could not reasonably be construed as a “substance” under UNCLOS, it would likely be construed by a dispute resolution body as “energy,” much as introduction of heat, such as waste water from production processes, appears to fall under this rubric.⁶¹ Moreover, as developed above, the uptake of carbon dioxide into the oceans can result in direct deleterious impacts on marine life, which clearly brings carbon dioxide under the definition of a polluting “substance” under UNCLOS.

Where necessary, UNFSA also imposes obligations on the Parties to adopt conservation and management measures for “species belonging to the same ecosystem or associated with or dependent upon target species” and to “protect biodiversity of the marine environment.”⁶² Thus, to the extent that climate change may diminish certain stocks, or alter their distribution in a way that adversely affects the interests of discrete Parties, a cause of action could arise under the Agreement.

Rare among international environmental agreements, UNFSA provides for a binding dispute resolution mechanism where efforts to resolve the dispute through non-binding methods proves to be unavailing. Part VIII of the Agreement applies

the dispute resolution mechanism set out in Part XV of UNCLOS to any dispute under the Agreement, even where one or more of the disputants are not Parties to UNCLOS.⁶³

As one scholar observed, UNCLOS “creates a binding system of obligations and dispute resolutions, which confers on a forum international jurisdiction, authority, and implementing powers that exceed those of other international environmental law forums and rival those conferred on the World Trade Organization.”⁶⁴ Part XV of UNCLOS provides States with four potential fora for settlement of disputes:⁶⁵ the International Tribunal for the Law of the Sea (“ITLOS”),⁶⁶ the International Court of Justice; an arbitral panel; or a special arbitral panel.⁶⁷ States may choose to declare their choice of forum, but in cases where they have not, or Parties to a dispute have not accepted the same procedure for dispute settlement, the dispute must be submitted to binding arbitration unless the Parties agree otherwise.⁶⁸ To date, the vast majority of Parties to UNCLOS have, *de facto*, chosen arbitration by their silence on the matter, as have most Parties to UNFSA.⁶⁹

POTENTIAL BARRIERS TO CAUSES OF ACTION UNDER UNFSA

A Party to UNFSA pursuing an action based on climate change damages would face some imposing barriers, though none need prove fatal.

General Causation

In many cases, declines of fish stocks or shifts in distribution may be attributable to a number of factors, including over fishing,⁷⁰ habitat destruction,⁷¹ or diminution of prey species.⁷² A Party defending itself against a claim of climate change may thus contend that it is not possible to link species decline or distribution shifts solely to climatic factors, and thus it cannot be held liable under UNFSA. This argument should not prevail. First, even if other factors may constitute threats to regulated species, clearly, climate change is a substantial peril for many of these species. A tribunal or panel could assess the extent of this threat by employing statistical probability analysis⁷³ to support a finding of liability at a reasonable level of probability. This would in turn trigger the responsibility⁷⁴ of major emitters of GHGs to adopt measures to reduce these emissions to levels that substantially reduce the threat to high migratory and straddling stock species. Second, UNFSA provides for wide application of the precautionary approach to protect living marine resources.⁷⁵ Thus, even under scenarios of uncertainty about a given threat “[t]he absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.”⁷⁶

Specific Causation

The target of a climate-related UNFSA action might argue that climate change is caused by a multitude of anthropogenic sources, and thus, any specific harm cannot be attributable to a specific Party, even a large GHG emitting State such as the United States. While this is certainly the case, an UNFSA action likely would not seek monetary damages, where the issue of specific causation would be clearly germane. Rather a Party bringing such an action would likely be seeking a commitment by the targeted Party to fulfill its “duty to cooperate” under the treaty⁷⁷ by enacting effective measures to contribute to the goal of “long-term sustainability of straddling fish stocks and highly migratory fish stocks.”⁷⁸ Thus, any Party failing to meet this obligation could be found to be in violation of the treaty.

Reluctance of Dispute Resolution Bodies to Address Climate Change

Experience with climate change litigation to date in the United States, at least, has demonstrated some reluctance on the part of members of the judiciary to address climate change issues given their limited scientific expertise. Consider, for example, Justice Scalia’s flippant but telling comment in the recent oral arguments in the recent Supreme Court oral arguments in *Massachusetts, et al. v. Environmental Protection Agency*:⁷⁹

JUSTICE SCALIA: . . . your assertion is that after the pollutant leaves the air and goes up into the stratosphere it is contributing to global warming.

MR. MILKEY: Respectfully, Your Honor, it is not the stratosphere. It’s the troposphere.

JUSTICE SCALIA: Troposphere, whatever. I told you before I’m not a scientist.

(Laughter.)

JUSTICE SCALIA: That’s why I don’t want to have to deal with global warming, to tell you the truth.⁸⁰

Parties bringing an action before ITLOS or an arbitral panel might experience similar reservations on the part of the dispute resolution body to grapple with the complicated technical issues associated with climate change, especially since the primary area of expertise of tribunal or panel members may be more traditional fisheries issues, such as the impact of harvesting on species. UNFSA provides two mechanisms to help address this concern. First, in cases where “a dispute concerns a matter of a technical nature,” the States involved in a dispute may refer the dispute to an “ad hoc expert panel,” which will confer with the

Substantially rising oceanic temperatures throughout this century will likely have negative impacts on highly migratory and straddling stocks species in many regions.

Parties and seek to resolve the dispute without recourse to binding procedures.⁸¹ A Party seeking to press a climate change claim could certainly seek to engage another Party in such negotiations initially, and should this fail to resolve the dispute, seek to introduce the panel's scientific findings in a binding dispute resolution forum. Additionally, if both Parties agree to it, cases of this nature can be referred to a "special arbitral panel." Under UNCLOS's dispute resolution provisions in this context, which UNFSA fully incorporates, a panel hearing a climate change-related dispute could be constituted by experts in the fields of fisheries, marine environmental protection, marine scientific research, drawn from the FAO, the United Nations Environment Program and the Intergovernmental Oceanographic Commission,⁸² all of whom have expertise on the nexus of fisheries and climate change.

Perhaps an even more imposing barrier to a cause of action under UNFSA may be the perceived threat to the legitimacy of a dispute resolution body should it enter a decision against a hegemonic State. As Strauss observes, international tribunals carefully marshal their political capital in an effort to preserve and enhance their legitimacy:

While the official function of international tribunals is to find the pre-existing law; in reality, for judges to have their decisions so accepted, they must engage in the creative process of negotiating the differing global interests to formulate results that are in accord with the international community's normative center of gravity. In arriving at politically viable legal standards, in addition to formally reviewing submitted briefs and memoranda and informally reading other legal commentary, judges engaged in a pragmatic assessment of the political situation, by factoring in the relative power of the protagonists and the interests of other important international actors.⁸³

The primary threat to the legitimacy of a UNFSA dispute resolution body in the context of climate change may be that a powerful State would choose to not comply with the decision given the dramatic policy changes that it might necessitate. As Silk recently observed, States may choose to not to comply with "binding" decisions when they deem it against their interests:

In international law, even allegedly binding dispute settlement mechanisms such as arbitration may be ignored when a state disagrees with the decision. To illustrate, in the Beagle Channel dispute between Chile and Argentina, Argentina challenged the validity of the arbitrators' decision on dubious grounds and, despite the implausibility of Argentina's repudiation, the decision was never enforced Under UNCLOS, there might be strong domestic and international pressures to sign a fishery agreement regardless of the costs of compliance, but when the time for compliance comes, narrower national interests may prevail.⁸⁴

Indeed, the fear that decisions against the United States might be ignored may explain the recent decisions of the Inter-American Commission on Human Rights and World Heritage Committee to reject petitions to address climate change under these respective regimes.⁸⁵

CONCLUSION

In a perfect world, the threat of climate change would be effectively addressed through the international institutional responses developed in the 1990s. Unfortunately, the specter of climate change looms larger now than it did a decade ago, and the prospects for adequate responses within the UNFCCC framework appear increasingly remote. Now more than ever, those most vulnerable to the impacts of climate change must explore alternatives that may finally galvanize the major greenhouse emitting States into action. UNFSA is one option that deserves further exploration.



Endnotes: Potential Causes of Action for Climate Change

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¹⁴ Ikuko Kao & Neil Chatterjee, *Japan's Kyoto Gap Widens as Emissions Rise*, **Endnotes: Potential Causes of Action for Climate Change on page 81**

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²⁹ World Bank, *supra* note 26, at 28.

³⁰ Grégory Beaugrand et al., *Reorganization of North Atlantic Marine Copepod Biodiversity and Climate*, 296 SCI. 1692, 1693 (2002); see also Anthony J. Richardson & David S. Schoeman, *Climate Impact on Plankton Ecosystems in the Northeast Atlantic*, 305 SCI. 1609-1612 (2004).

³¹ Ulf Riebesell et al., *Reduced Calcification of Marine Plankton in Response to Increased Atmospheric CO₂*, 407 NATURE 364, 364 (2000).

³² Caspar Henderson, *Paradise Lost*, NEW SCI. 29-30, Aug. 5, 2006; see also Joan A. Kleypas et al., *Geochemical Consequences of Increased Atmospheric Carbon Dioxide on Coral Reefs*, 284 SCI. 118, 118 (1999); see also The Royal Society, *Ocean Acidification Due to Increasing Atmospheric Carbon Dioxide*, Policy Doc. 12/05 (June, 2005), at 6 available at <http://www.royalsoc.ac.uk/displaypagedoc.asp?id=13539> (last visited Feb. 8, 2007).

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projects in developing countries with contributions from the developed countries according to the UN funding formula. See STEPHEN O. ANDERSEN & MADHAVA SARMA, *PROTECTING THE OZONE LAYER: THE UNITED NATIONS HISTORY* (Earthscan Publications 2002). RICHARD BENEDICK, *OZONE DIPLOMACY: NEW DIRECTIONS IN SAFEGUARDING THE PLANET* (2d Revised ed., Harvard University Press 1998).

¹² The “data points” shown in Figure 1 are indicative only. Plotting the thousands of actual projects that have been undertaken would entail a significant empirical effort, and is the subject of ongoing data collection. Note also that the

larger the LCCP reduction per dollar (*i.e.*, the farther up the vertical axis), the greater the environmental benefit.

¹³ The choice of whether to use ODP/\$ and LCCP/\$ or \$/ODP and \$/LCCP as units on the axes is arbitrary. The substantive application of the methodology being proposed here is not affected, so long as consistency is maintained in describing the projects. Of course, the tradeoff line could have curvature, but that is a second-order consideration that will not be discussed here.

¹⁴ Note that AB and A'B' are not necessarily (or even likely to be) parallel.

¹⁵ Press Release, TRANE Extends Energy Efficiency Advantage of Earth-Wise™ CenTraVac™ Chillers (Dec. 16, 2005), *available at* http://www.trane.com/commercial/homepage/pdf/PR_EWchillers1205.pdf (last visited Feb. 13,