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## Basic Functions and Principles of International Environmental Law in the Context of Managing Water Resources

### Keywords

Environmental Law, Water Law, Jurisdiction, Statutes, Discrimination

# BASIC FUNCTIONS AND PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW IN THE CONTEXT OF MANAGING WATER RESOURCES

JAMES A.R. NAFZIGER<sup>\*</sup>

## I. INTRODUCTION

International environmental law plays an important role in shaping and giving effect to institutional policies for managing natural resources. Its rules, principles, and procedures are normative not only when they are binding as hard law but also when they provide non-binding guidance as soft law for national and sub-national policies. In either normative capacity, international environmental law lends greater authority and coherence to divergent sectoral policies and fills gaps where effective policies are incomplete or do not exist. The law also facilitates the transfer of institutional policies and techniques from one political unit or system to another. This harmonizing effect is particularly apparent within integrated regional systems such as the European Union and federal systems such as the United States. But the systems themselves are also becoming more congruent with each other. The growing structural convergence of the European and United States systems is itself a good reason to undertake trans-Atlantic analysis of institutional policies for regulating and managing resources. We can learn a great deal from each other's experiences in having to grapple, more and more, with the same or similar complexities.

The purpose of this survey is to introduce the essentials of international environmental law and suggest how it can be efficiently integrated into post-secondary education concerning the comparative environmental impacts of different institutional policies for managing natural resources. The focus is on the environmental management of shared water resources. The aim is to give students, whether law-trained or not, a deeper understanding of the uses of international environmental law in a variety of ecological sectors, from the oceans to the mountains, and on all tiers of natural resource management, from local to international.

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This survey therefore summarizes the general legal framework and historical development of international environmental law, then identifies several of its essential functions and general principles, and concludes with a brief commentary on a few of its contributions and challenges to it. Expressing the uses of the law primarily in terms of the essential functions of multilateral agreements and the most important principles is intended to highlight the utility of international environmental law and institutions. At the very least, a familiarity with such functions and principles, within the context of shared water resources, yields a common vocabulary to express diverse policy alternatives.

## II. THE GENERAL LEGAL FRAMEWORK

Public international law, primarily, but also private international law<sup>1</sup> play significant roles in resolving transboundary, environmental disputes. Limited extraterritorial application of national regulatory law is also noteworthy.<sup>2</sup>

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1. Private international law, otherwise known as "conflict of laws," refers largely to the rules that govern jurisdiction of courts, choice of law, and the recognition and enforcement of foreign judgments in civil actions.

2. Courts in the United States generally have been reluctant to extend federal environmental laws extraterritorially even when foreign activity causes harmful effects in the country. *See, e.g.*, *Born Free U.S.A. v. Norton*, 278 F. Supp. 2d 5, 19-20 (D.D.C. 2003) (refusing to apply the National Environmental Policy Act, 42 U.S.C. §§ 4321-4370H [hereinafter NEPA], extraterritorially in cases involving importation of elephants from a foreign state), *vacated*, No. 03-5216, 2004 WL 180263 (D.C. Cir. 2004). The main exception is where either the conduct or effects at issue occur in the global commons, outside any national jurisdiction. *See* *Natural Res. Def. Council v. United States*, No. CV-01-07781 CAS(RZX), 2002 WL 32095131, at 9-12 (C.D. Cal. Sept. 17, 2002) (holding that the presumption against extraterritorial application of U.S. statutes did not bar extraterritorial application of NEPA to Navy sea tests affecting the U.S. Exclusive Economic Zone); *Env'tl. Def. Fund v. Massey*, 986 F.2d 528, 529 (D.C. Cir. 1993) (holding "that the presumption against the extraterritorial application of statutes . . . does not apply where the conduct regulated by the statute occurs primarily . . . in the United States, and the alleged extraterritorial effect of the statute will be felt in Antarctica—a continent without a sovereign, and an area over which the United States has a great measure of legislative control"). But courts are becoming less inhibited in extending statutory law to events and persons in other countries with effects in the United States. *See, e.g.*, *Pakootas v. Cominco Teck Metals, Ltd.*, No. CV-04-256-AAM, 2004 WL 2578982, at 16-17 (E.D. Wash. Nov. 8, 2004). There, the U.S. members of the Confederated Tribes of the Colville Reservation brought an action against a Canadian-owned smelter in Trail, British Columbia, on the basis of an extraterritorial application of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). *Id.* at 1. The court denied the defendant corporation's motion to dismiss, finding as follows:

There is no direct evidence that Congress intended extraterritorial application of CERCLA to conduct occurring outside the United States. There is also no direct evidence that Congress did not intend such application. There is, however, no doubt that Congress intended CERCLA to clean up hazardous substances at sites within the jurisdiction of the United States. That fact, combined with the well-established principle that the presumption against extraterritorial application generally does not apply where conduct in a foreign country produces adverse effects within the United States, leads the court to conclude that extraterritorial application of CERCLA is not precluded in this case. The Upper Columbia River Site is a "domestic condition" over which the United States has sovereignty and

Although public international law as a whole was once confined, in the positivist tradition, to relations between States, it infuses nearly every sector of human activity today.<sup>3</sup> Regardless of whether particular rules of law are hard, in the sense of being legally binding, or soft, when they are normative but non-binding, they not only govern relations *between* sovereign States but also shape expectations and decisions *within* national and sub-national systems. Thus, clean-air issues implicate the law of transfrontier pollution whereas issues of water quality and accessibility engage the international law of watercourses and drainage basins. By the same token, local management of fisheries may need to take account of international rules applicable in coastal zones. International environmental law also promotes such ecological projects as the establishment of natural heritage sites, reserves, other protected areas, and biological diversity programs.

Several examples illustrate the role of international environmental law in managing water resources. In the *Case Concerning the Gabčíkovo-Nagymaros Project*,<sup>4</sup> Hungary and Slovakia disputed each other's construction of dams on the Danube River.<sup>5</sup> The International Court of Justice, quoting from its advisory opinion in *Legality of the Threat or Use of Nuclear Weapons*,<sup>6</sup> reiterated that

[T]he environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn. The existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment.<sup>7</sup>

It should be noted that much of international environmental law is sectoral. For example, wetlands constitute one sector with its own regime, watercourses another, and forests yet a third sector. Of particular significance is the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (also

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legislative control. Extraterritorial application of CERCLA in this case does not create a conflict between U.S. laws and Canadian laws.

*Id.* at 16.

3. Since its origins in the sixteenth and seventeenth centuries, the “law of nations”—a term that appears, for example, in the eighteenth-century United States Constitution—was premised on a “universal law of society.” *United States v. Smith*, 18 U.S. (5 Wheat.) 153, 161 (1820). In the late eighteenth century Jeremy Bentham converted the “law of nations” into what he was the first to call “international law.” Bentham’s positivist concept of law, based on the consent of sovereign States, led to John Austin’s analytic jurisprudence. It adopted a formalistic view of law as the product of sovereign command, purely and simply. Austin’s extreme version of positivism temporarily relegated international law to the status of moral suasion from the mid-nineteenth century to the first quarter of the twentieth century. Today, however, a more cosmopolitan view of international law, freed of Austinian positivism, broadly extends the authority and legitimacy of international law into human affairs.

4. *Gabčíkovo-Nagymaros Project (Hung. v. Slov.)*, 1997 I.C.J. 7 (Sept. 25).

5. *Id.* ¶¶ 40-41, 44.

6. *Legality of Threat or Use of Nuclear Weapons*, Advisory Opinion, 1996 I.C.J. 226 (July 8).

7. *Id.* ¶ 29.

known as the Ramsar Convention),<sup>8</sup> to which the United States and all members of the European Union are parties. It seeks "to stem the progressive encroachment and loss of wetlands . . . by combining far-sighted national policies and coordinating international action."<sup>9</sup> Although the treaty was the first to focus sharply on the habitat of an endangered species (waterfowl), its scope has broadened to encompass the entire wetlands ecology. Article 5 mandates that

The Contracting Parties shall consult with each other about implementing obligations arising from the Convention especially in the case of a wetland extending over the territories of more than one Contracting Party or where a water system is shared by Contracting Parties.

They shall at the same time endeavour to co-ordinate and support present and future policies and regulations concerning the conservation of wetlands and their flora and fauna.<sup>10</sup>

The Convention further requires parties to engage in the conservation and "wise use" of wetlands, particularly those of international importance that each party designates for inclusion on the Ramsar Convention List.<sup>11</sup> Parties also agree to undertake environmental impact assessments, resource inventories, the establishment of nature reserves, ecological training programs, and consultations with other parties.<sup>12</sup>

The 2004 Berlin Rules on Water Resources,<sup>13</sup> though soft law, and the 1997 U.N. Convention on the Law of Non-Navigational Uses of International Watercourses,<sup>14</sup> though not yet in force, are also influential. Each of these instruments sets forth important principles, rules, and general practices. The Convention on Watercourses, for example, requires States Parties to cooperate in preventing, reducing, and controlling pollution that may cause significant harm to watercourses and related environments<sup>15</sup> and to protect and preserve the watercourse ecosystems within their control.<sup>16</sup> It also instructs States to settle their disputes related to their treaty obligations according to a graduated process, beginning with negotiations and, as a last resort, concluding with binding arbitration or contentious proceedings before the International Court of Justice.<sup>17</sup>

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8. Convention on Wetlands of International Importance Especially as Waterfowl Habitat, Feb. 2, 1971, T.I.A.S. No. 11,084, 996 U.N.T.S. 245 [hereinafter Convention on Wetlands].

9. *Id.* at pmb1.

10. *Id.* art. 5.

11. *Id.* arts. 2-3.

12. *Id.* arts. 3-5.

13. Int'l Law Ass'n, *Report of the Seventy-First Conference*, 71 INT'L L. ASS'N REP. CONFS. 334 (Aug. 16-21, 2004) [hereinafter Berlin Rules].

14. Convention on the Law of the Non-navigational Uses of International Watercourses, *opened for signature* May 21, 1997, 36 I.L.M. 700 [hereinafter Convention on Watercourses].

15. *Id.* art. 21, ¶ 2.

16. *Id.* art. 20.

17. *Id.* art. 33.

This survey might have simply identified other legal authority applicable to individual case studies, or it might have focused sharply on the particular geographical regions addressed by published case studies—for example, the framework of integrated coastal management along the Spanish Mediterranean littoral.<sup>18</sup> Alternatively, the survey might have focused, somewhat more broadly, on the European Union, taking account of its established rules as well as the evolving norms of its marine and other policies. Instead, the survey's scope is global so as to facilitate a comprehensive understanding of the role of international environmental law in shaping and giving effect to a wide variety of institutional policies with environmental impacts.

### III. HISTORICAL DEVELOPMENT AND ESSENTIAL CHARACTERISTICS OF INTERNATIONAL ENVIRONMENTAL LAW

#### A. *Early Initiatives*

The earliest recorded treaty in human history, between the city states of Lagash and Umma in Mesopotamia, in about 3100 B.C.,<sup>19</sup> confirms their settlement of a dispute concerning shared water resources. In modern times, bilateral agreements between sovereign States have helped manage fisheries, protect migratory birds, and resolve issues of marine and riparian regulatory jurisdiction. Eventually treaties began to require international collaboration and establish institutions to coordinate national implementation of international agreements. For example, the Fur Seals Conventions of 1893<sup>20</sup> mandated regional consultations and cooperation to protect that species of wildlife in the North Pacific. The 1909 Treaty Relating to the Boundary Waters and Questions Along the Boundary between Canada and the United States<sup>21</sup> was ahead of its time. It was especially innovative in two respects: its establishment of a bilateral institution, the International Joint Commission, for consultation and dispute resolution; and its ban on “pollution”<sup>22</sup> of boundary waters. Today, we take the term “pollution” for granted, but it was quite novel as a legal concept in 1909 when the Boundary Waters Treaty was concluded. Although the term was originally limited to navigational obstructions, it has evolved to include the contaminants with which we are most apt to associate “pollution” today.

#### B. *Arbitral Awards*

International environmental law that transcends rules for regulating specific natural resources is, however, of recent origin. In particular, the landmark series of

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18. See Juan Suárez de Vivero & J.C. Rodríguez Mateos, *Coastal Crisis: The Failure of Coastal Management in the Spanish Mediterranean Region*, 33 COASTAL MGMT. 206 (2005).

19. See Amnon Altman, *Tracing the Earliest Recorded Concepts of International Law. The Early Dynastic Period in Southern Mesopotamia*, 6 J. HIST. INT'L L. 153 (2004).

20. Fur Seal Fisheries in Bering Sea, U.S.-U.K., Apr. 18, 1892, 27 Stat. 952, T.S. No. 140-3, 12 Bevans 226 (1968).

21. Treaty Relating to Boundary Waters and Questions Along the Boundary between Canada and the United States, U.S.-U.K., Jan. 11, 1909, T.S. No. 548, 12 Bevans 319 [hereinafter Treaty Relating to Boundary Waters].

22. *Id.* art. IV.

arbitration between the United States and Canada in the *Trail Smelter Case*<sup>23</sup> during the late 1930s and 1940s began the development of general principles to govern state responsibility for environmental injury. In particular, the *Trail Smelter* tribunal held Canada responsible, on a theory of strict liability, for injury to persons and property in the State of Washington resulting from transboundary emissions of sulfur dioxide.<sup>24</sup> In doing so, the tribunal articulated a principle of tort law, *sic utere tuo ut alienum non laedas (sic utere tuo)*. As elaborated in *Trail Smelter*, it provides 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 or the properties of persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.<sup>25</sup>

In the *Lac Lanoux Arbitration*,<sup>26</sup> another arbitral tribunal resolved a dispute between Spain and France concerning a French plan to divert boundary waters from their natural flow into Spain and thereby create a reservoir in France. The tribunal formulated a general principle of procedure that requires States, particularly upper riparian States, to negotiate in good faith with other States concerning any intended diversion or other changes in the use of shared water resources.<sup>27</sup> “[T]he reality of the obligation thus undertaken,” the tribunal wrote, is

uncontestable and sanctions can be applied in the event, for example, of an unjustified breaking off of the discussions, abnormal delays, disregard of the agreed procedures, systematic refusals to take into consideration adverse proposals or interests, and, more generally, in case of violation of the rules of good faith.<sup>28</sup>

The opinion also confirmed that in undertaking a project affecting transboundary resources, a State (France in the case) must always take into consideration the interests of other potentially affected States (Spain).<sup>29</sup>

These principles, obvious as they might seem today, formed the foundation of international environmental law. They also led to the formulation of new sectoral principles and rules. These include, for example, provisions in the 1997 United Nations Convention on the Law of Non-Navigational Uses of International Watercourses<sup>30</sup> as well as two important instruments adopted by the non-governmental International Law Association: the 1965 Helsinki Rules on the Uses

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23. *Trail Smelter Case (U.S. v. Canada)*, 3 R.I.A.A. 1911 (1941).

24. *Id.* at 1958.

25. *Id.* at 1965.

26. *Lac Lanoux Arbitration (Fr. v. Spain)*, 12 R.I.A.A. 281.

27. *Id.* at 302.

28. *Id.* at 301.

29. *Id.* at 311.

30. *Convention on Watercourses*, *supra* note 14.



of the Waters of International Rivers<sup>31</sup> and the 2004 Berlin Rules on Water Resources.<sup>32</sup>

### *C. United Nations Conferences*

By 1972, the global community was ready to formulate a comprehensive set of environmental principles. The project was prompted by an accretion of divergent national practices, a growing appreciation of the need for improving environmental quality on the basis of international cooperation, and a greater scientific orientation to complex ecologies. The United Nations General Assembly therefore convened the first of three conferences on environmental issues. The 1972 Stockholm Conference created four mechanisms: the United Nations Environment Programme (UNEP), a coordinating mechanism among existing institutions, a framework for future action, and a set of non-binding general principles known as the Stockholm Declaration.<sup>33</sup> The Declaration's most significant principles are these:

#### Principle 21

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and 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.<sup>34</sup>

#### Principle 22

States shall co-operate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction.<sup>35</sup>

Building on Principle 22, a second U.N.-sponsored conference on environmental issues was held in 1992, hosted by Rio de Janeiro. It focused on the critical relationship between the environment and developmental needs, particularly of developing countries. The Rio Conference—formally, the United Nations Conference on the Environment and Development (UNCED), also known as the “Earth Summit”—is remembered for its integration of non-governmental organizations into the process of formulating law and policy as well as a new orientation toward a requirement of “sustainable development.” The conference

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31. *Report of the Fifty-Second Conference*, 52 INT'L L. ASS'N REP. CONF. 447 (Aug. 14-20, 1966).

32. Berlin Rules, *supra* note 13.

33. United Nations Conference on the Human Environment, Stockholm, Swed., June 5-16, 1972, *Declaration of the United Nations Conference on the Human Environment*, 3-5, U.N. Doc. A/CONF.48/14/Rev.1, 11 I.L.M. 1416 (June 16, 1972) [hereinafter Stockholm Declaration].

34. *Id.* princ. 21.

35. *Id.* princ. 22.

also created three non-binding instruments: Agenda 21,<sup>36</sup> an extensive set of recommendations on more than 100 topics for ongoing consultation and further development; the Forest Principles,<sup>37</sup> and the Rio Declaration on Environment and Development.<sup>38</sup> Agenda 21, in turn, led to the creation of the high-level U.N. Sustainable Development Commission, which provides an ongoing process of cooperation in implementing the Agenda 21 recommendations at both national and international levels. The Commission's emerging capacity to harmonize divergent state practices and unify international rules, along with new post-9/11 priorities in the international community, may help explain why the third U.N.-sponsored conference on the environment, the Johannesburg Conference in 2002,<sup>39</sup> had a less-than-urgent agenda and an unambitious, generally static outcome.

#### D. Treaties

The Stockholm Conference was a watershed in the development of international agreements to protect the environment. Before the conference in 1972, a less than a dozen treaties pertained to the environment whereas today well over a thousand are in force. These range geographically from the Antarctic Treaty Protocol on Environmental Protection<sup>40</sup> to the Agreement on the Conservation of Polar Bears.<sup>41</sup> Among the best-known treaties are the 1999 Basel Protocol on Liability and Compensation for Damages Resulting from Transboundary Movements of Hazardous Wastes and their Disposal,<sup>42</sup> the Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol on Substances that Deplete the Ozone Layer,<sup>43</sup> and the Kyoto Protocol to the U.N. Framework Convention on Climate Change.<sup>44</sup>

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36. United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3-14, 1992, *Agenda 21*, U.N. Doc. A/CONF.151/26/Rev.1 (Aug. 12-13, 1992).

37. United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3-14, 1992, *Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests*, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. III), Annex III (Aug. 14, 1992).

38. United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3-14, 1992, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), Annex I (Aug. 12, 1992) [hereinafter Rio Conference].

39. World Summit on Sustainable Development, Johannesburg, S. Afr., Aug. 26 – Sept. 4, 2002, U.N. Doc. A/CONF.199/20 [hereinafter Johannesburg Conference].

40. Protocol on Environmental Protection to the Antarctic Treaty, *done* Oct. 4, 1991, 30 I.L.M. 1455.

41. Agreement on the Conservation of Polar Bears, *done* Nov. 15, 1973, 27 U.S.T. 3918, T.I.A.S. No. 8,409.

42. Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Basel, Switz., Dec. 6-10, 1999, *Report of the Fifth Meeting of the Conference of the Parties to the Basel Convention*, U.N. Doc. UNEP/CHW.5/29 (Dec. 10, 1999).

43. Vienna Convention for the Protection of the Ozone Layer, Mar. 22, 1985, T.I.A.S. No. 11,097; Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 26 I.L.M. 1541.

44. Conference of the Parties to the Framework Convention on Climate Change: Kyoto Protocol, *adopted* Dec. 10, 1997, 37 I.L.M. 22 [hereinafter Kyoto Protocol].

Some of the treaties provide detailed, binding rules. For example, the Stockholm Convention on Persistent Organic Pollutants sets detailed rules for controlling the effects of chemical pollutants that travel long distances in water or air and resist degradation.<sup>45</sup> On the other hand, there has been a trend toward so-called framework treaties that provide only broad guidance, relying not on precise rules but rather on general directives and procedural commitments by which States agree to undertake specific initiatives and cooperate with each other in prescribed processes for policy and rule-making. The Vienna Convention for the Protection of the Ozone Layer is a particularly good example of a framework agreement within which required follow-up conferences among the parties have led to effective protocols and other initiatives such as non-compliance procedures in the Montreal Protocol. Another trend has been to establish ongoing mechanisms and institutions for reporting, compliance-monitoring, and dispute resolution.

In a blueprint for general education on the comparative impacts of different institutional policies, there would be little point in cataloguing the myriad environmental treaties in force or enumerating their specific provisions in detail. Instead, it is more instructive to identify the general functions of the treaties, as follows:

1. Imposition of obligations to notify, consult, and negotiate agreements in good faith. *Example:* the post-Chernobyl Convention on the Early Notification of a Nuclear Accident.<sup>46</sup>
2. Establishment of qualitative standards, requiring specific technological safeguards or imposing limits on the emission of pollutants or other adverse activities. *Example:* the Kyoto Protocol to the U.N. Framework Convention on Climate Change.<sup>47</sup>
3. Limited authorization of hazardous activities, through cooperative review of proposals for such authorization, grants of permission, and prior informed consent procedures. *Example:* the Cartagena Protocol on Biosafety.<sup>48</sup>
4. Establishment of liability-and-compensation regimes, often providing for the award of damages on a theory of strict liability (substance-oriented) or for enhanced access to courts of law or arbitral tribunals in order to redress injury (process-oriented). *Example:* the Civil Liability Convention for Oil Pollution Damage.<sup>49</sup>

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45. Stockholm Convention on Persistent Organic Pollutants, *adopted* May 22, 2001, 40 I.L.M. 532.

46. Convention on the Early Notification of a Nuclear Accident, *done* Sept. 26, 1986, 25 I.L.M. 1369.

47. Kyoto Protocol, *supra* note 44.

48. Cartagena Protocol on Biosafety to the Convention on Biological Diversity, *adopted* Jan. 29, 2000, 39 I.L.M. 1027.

49. International Convention on Civil Liability for Oil Pollution Damage, Nov. 29, 1969, 17 U.S.T. 1523, 973 U.N.T.S. 3.

5. Provision of funds to provide compensation and technical assistance. *Example:* the World Bank/UNEP/UNDP-based Global Environmental Facility (GEF)<sup>50</sup> for assisting developing countries to address problems relating to biodiversity, climate change, ozone depletion, and international water resources.
6. Formulation of regimes for species and habitat protection. *Example:* the U.N. Convention on Biological Diversity.<sup>51</sup>
7. Exemptions for otherwise questionable schemes of environmental protection in more general agreements, some of whose non-environmental objects and purposes may even threaten environmental initiatives. Especially problematic have been the modalities of free trade, as enshrined in the General Agreement on Tariffs and Trade (GATT)<sup>52</sup> and related instruments in the Marrakesh Agreement that established the World Trade Organization.<sup>53</sup> GATT and WTO dispute-resolution panels have had to deal with the tensions between trade and environmental disciplines on the basis of stipulated exemptions. *Example:* GATT's chapeaus and specific provisions for natural resource and environment-related exemptions from otherwise mandatory trade disciplines. (The tuna-dolphin,<sup>54</sup> shrimp-turtle,<sup>55</sup> and beef hormone rulings<sup>56</sup> of GATT/WTO panels are particularly instructive.)

#### *E. General Principles*

International environmental law encapsulates several general principles. They grew out of substantive and procedural elements that were first articulated in the foundational arbitral awards. They are enshrined and further elaborated in U.N.-sponsored declarations and other legal instruments. As time went on, new principles, often forming the core of binding rules, have helped shape multilateral treaties and decide cases. Ten governing principles, as follows, are noteworthy. All of them could be integrated quite easily into case studies suitable for post-secondary education.

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50. World Bank, *Documents Concerning the Establishment of the Global Environment Facility*, World Bank Res. No. 91-5 (Nov. 1991).

51. United Nations Conference on Environment and Development: Convention on Biological Diversity, June 5, 1992, 31 I.L.M. 818.

52. General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194.

53. Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, Dec. 15, 1993, 1867 U.N.T.S. 3.

54. Panel Report, *United States – Restrictions on Imports of Tuna*, WT/DS21/R (Sept. 3, 1991).

55. Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R (Oct. 12, 1998).

56. Appellate Body Report, *United States – EC Measures Concerning Meat and Meat Products (Hormones)*, WT/DS26/AB/R (Jan. 16, 1998).

1. *Prevention of Environmental Harm Principle* (the *sic utero tuo* principle articulated in the *Trail Smelter* award<sup>57</sup> and refined as Principle 21 of the 1972 Stockholm Declaration).<sup>58</sup>
2. *Good Neighborliness Principle* (the requirement of information-sharing, notification, consultation, good-faith negotiations, and cooperation in planning projects with potential environmental impacts and responding to emergencies).<sup>59</sup>
3. *Principle of Non-Discrimination* (the constraint against responding more favorably toward one particular State or States affected by harmful activity than other affected States).<sup>60</sup>
4. *Principle of Common but Differentiated Responsibilities* (the recognition that developed States, having disproportionately caused environmental degradation and having the wherewithal to finance environmental improvements and recompense injury, should bear more of the cost of sustainable development initiatives).<sup>61</sup>
5. *Precautionary Principle* (the requirement, found in most recent environmental agreements, that in the face of scientific uncertainty about environmental risks inherent in a particular activity, decisions about that activity should err on the side of taking effective measures to avoid potential harm).<sup>62</sup>
6. *Polluter-Pays Principle* (a rule, well-established in Europe, that the polluter should internalize and be prepared to pay the costs of remedying any injury that might result from its activity).<sup>63</sup>
7. *Principle of Inter-Generational Equity* (the recognition that, in fairness to future generations, resources should be used in such a way as to maintain abundance and environmental quality for the benefit of future generations).<sup>64</sup>
8. *Principles of Territorial Integrity and Permanent Sovereignty Over Natural Resources* (the territorially-based understanding that each sovereign State has the primary custody of its own resources, subject to principles of good

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57. *Trail Smelter Case*, *supra* note 23, at 1965.

58. Stockholm Declaration, *supra* note 33, princ. 21.

59. United Nations Environment Programme, *Environmental Law Guidelines and Principles on Shared Natural Resources*, princs. 1, 5-7, 9 (1978).

60. Summary Records of the 2528th Meeting, [1998] Y.B. Int'l L. Comm'n, vol. 1, U.N. Doc.A/CN.4/SR.2528/1998.

61. EDITH BROWN WEISS ET AL., *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* 197 U.N. (2d ed. 2007).

62. Rio Conference, *supra* note 38, princ. 15.

63. *Id.* princ. 16.

64. The seminal work is EDITH BROWN WEISS, *IN FAIRNESS TO FUTURE GENERATIONS: COMMON PATRIMONY, AND INTERGENERATIONAL EQUITY* (1989).

stewardship including those of preventing environmental harm and ensuring inter-generational equity).<sup>65</sup>

9. *Principle of a Common Heritage* (the understanding that all human beings are stakeholders in the resources of common areas—outer space, the high seas, the seabed, and Antarctica—and in the natural heritage within sovereign States that is of acknowledged global importance and commonality).<sup>66</sup>
10. *Principle of Sustainable Development* (the requirement, closely related to that of inter-generational equity, that States must ensure the sustainability over time of their use of natural resources).<sup>67</sup>

After the 1992 Rio Conference, the principle of sustainable development became a bottom-line or benchmark for international cooperation and planning. In the *Case Concerning the Gabčíkovo-Nagymaros Project*,<sup>68</sup> for example, the International Court of Justice endorsed this principle, as follows:

Throughout the ages, mankind has, for economic and other reasons, constantly interfered with nature. In the past, this was often done without consideration of the effects upon the environment. Owing to new scientific insights and to a growing awareness of the risks for mankind—for present and future generations—of pursuit of such interventions at an unconsidered and unabated pace, new norms and standards have been developed, set forth in a great number of instruments during the last two decades. This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development.<sup>69</sup>

The International Law Commission (ILC), the United Nations' chosen instrument for the codification and progressive development of international law, has reinforced these principles in its 2006 Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities.<sup>70</sup> These principles address internationally harmful activity that is not prohibited by international law. (The ILC's Articles on Responsibility of States for Internationally Wrongful Acts<sup>71</sup> addresses the responsibility of States for

65. The cornerstone is Resolution on Permanent Sovereignty Over Natural Resources, G.A. Res. 1803, U.N. GAOR, 17<sup>th</sup> Sess., Supp. No. 17 at 15, U.N. Doc. A/5217 (Dec. 14, 1962).

66. Agreement Relating to the Implementation of Part XI of the United Nations Convention of the Law of the Sea of 10 December 1982, G.A. Res. 48/263, U.N. Doc. A/Res/48/263 (Aug. 17, 1994).

67. Report of the World Commission on Environment and Development, G.A. Res. 42/187, ¶ 2, U.N. Doc. A/RES/42/187 (Dec. 11, 1987).

68. *Gabčíkovo-Nagymaros Project*, *supra* note 4.

69. *Id.* at 78.

70. Rep. of the Int'l Law Comm'n, Fifty-eighth Session, U.N. GAOR, 61st Sess., Supp. No. 10, ¶ 66, U.N. Doc. A/61/10 (2006).

71. Rep. of the Int'l Law Comm'n, Fifty-third Session, U.N. GAOR, 56th Sess., Supp. No. 10, U.N. Doc. A/56/10 (2001).

internationally injurious activity within their jurisdiction that violates international law, regardless of the activity's environmental consequences).

These Draft Principles are non-binding.<sup>72</sup> They are soft law, premised in a list of the elements of environmental damage for which transboundary remedies are prescribed. Among the most important principles are "prompt and adequate compensation for victims of hazardous transboundary activity"; adequate administrative and judicial competence to ensure such compensation; international cooperation, including claims-settlement procedures and cooperative funding to avoid and compensate for injury; notification to other States of potentially injurious incidents; and best efforts to mitigate or eliminate damages.<sup>73</sup>

The ILC has also undertaken a project to develop principles on the use of transboundary groundwater aquifers and aquifer systems, including recharge zones, discharge zones and external sources with major impacts on groundwater.<sup>74</sup> This project essentially retraces the regimes established by the International Law Association's 1965 Helsinki Rules and 2004 Berlin Rules.

#### IV. INSTITUTIONS

As even a brief history of international environmental law and treaty-based implementation discloses, numerous international institutions are instrumental in the global system of environmental management. Some of these institutions are established under general international law not specifically addressed to environmental concerns. Such institutions include, for example, the International Court of Justice, the European Union, the Law of the Sea Tribunal, and the dispute-settlement panels of the World Trade Organization. Other global institutions, however, have been specifically established by environmental treaties (for example, the International Union for the Conservation of Nature<sup>75</sup> (IUCN), established in 1948 as one of the first global environmental bodies, and the Secretariat for the Convention on International Trade in Endangered Species<sup>76</sup>).

Regional institutions, too, have become important. These include several that were established under general international law (for example, the European Union and the Arctic Council) and others designed specifically to protect the environment and manage natural resources. The latter category includes, for example, the South Pacific Resource and Environmental Protection Agreement,<sup>77</sup> the Caribbean

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72. Rep. of the Int'l Law Comm'n, Fifty-eighth Session, U.N. GAOR, 61st Sess., Supp. No. 10, ¶ 67, U.N. Doc. A/61/10 (2006).

73. *Id.*

74. International Law Commission, *Third Report on Shared Natural Resources: Transboundary Groundwaters*, U.N. Doc. A/CN.4/551 (Feb. 11, 2005).

75. International Union for Conservation of Nature, *IUCN – About IUCN*, <http://www.iucn.org/about/>.

76. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), art. 12, Mar. 3, 1973, 993 U.N.T.S. 243, 27 U.S.T. 1087.

77. South Pacific Region: Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, Nov. 25, 1986, 26 I.L.M. 38 (1987).

Regional Seas Convention,<sup>78</sup> the Asia-Pacific Partnership on Clean Development,<sup>79</sup> the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution and its Protocols,<sup>80</sup> and the 1974 Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area.<sup>81</sup>

#### V. CONTRIBUTIONS OF THE LAW AND CHALLENGES TO IT

We have seen that international environmental law can provide substantive guidance for utilizing natural resources responsibly and promoting sustainable development. We have also seen that the law can help avoid and resolve disputes. These and other uses of the law can be conveniently and efficiently expressed in terms of several treaty functions and general principles. Together, they form an authoritative framework of relatively stable expectations about both the substance and procedures for institutionalized resource management.

It is important to recall that international environmental law applies not only at the international level of authority but at national and sub-national levels as well. Depending largely on national constitutions, legal traditions and political will, the authority of international environmental law varies among national systems. In some systems it may control decision-making even in a purely domestic context. For example, the High Court of Australia, in a landmark decision of 1983,<sup>82</sup> held that the listing of wilderness areas in Tasmania as World Heritage Sites under the 1972 World Heritage Convention effectively barred plans for a large-scale hydroelectric dam project.<sup>83</sup>

In the United States, a seminal judicial decision by the Supreme Court in *Missouri v. Holland*<sup>84</sup> held that a migratory bird treaty between the United States and Great Britain (as the then treaty-making authority in Canada) was the Supreme Law of the Land.<sup>85</sup> The decision thereby granted federal agents the authority to enforce the country's cooperative obligations to Canada under the treaty, even though doing so required the federal government to preempt the established authority of the States over wildlife conservation.<sup>86</sup> The implications of *Missouri v. Holland* are not limited, however, to treaty obligations. The Supreme Court ruled long ago that *all* international law, including international custom and general principles, is "our law," with the same legal compulsion as Acts of

78. Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, Mar. 24, 1983, S. Treaty Doc. No. 98-13 (1984).

79. See Charter, Asia-Pacific Partnership on Clean Development and Climate, *adopted* Jan. 11-13, 2006.

80. Convention for the Protection of the Mediterranean Sea Against Pollution, Feb. 16, 1976, 15 I.L.M. 285.

81. Convention on the Protection of the Marine Environment of the Baltic Sea Area, Mar. 22, 1974, 13 I.L.M. 544.

82. *Commonwealth v. Tasmania* (1983) 158 C.L.R. 1 (Austl.).

83. *Id.* ¶ 2.

84. *State of Missouri v. Holland*, U.S. Game Warden, 252 U.S. 416 (1920).

85. *Id.* at 430-33.

86. See Sebastian T. Patti, *The Resurrection and Expansion of the Migratory Bird Treaty Act*, 50 U. COLO. L. REV. 165, 169 (1979).



Congress and treaties under the Supremacy Clause of the United States Constitution.<sup>87</sup> If, however, a particular treaty is not deemed to be self-executing, it requires an Act of Congress to become effective within United States jurisdiction.<sup>88</sup> That is usually the case if, for example, a treaty requires the appropriation of money, commits the government to a contractual obligation, or imposes new human rights standards.<sup>89</sup>

Examples of substantive contributions for which international environmental law can take partial credit include the gradual improvement of the ozone layer, the amelioration of water resource problems in the Zambezi River Basin, better controls over trafficking in endangered birds, wetlands recovery in parts of the United Kingdom, and the avoidance of environmentally risky activities in Antarctica. Procedural contributions of international environmental law include detailed processes of consultation, reporting, planning, and negotiation under such instruments as the Vienna Convention on the Ozone Layer,<sup>90</sup> as well as a reliance on non-governmental advocacy groups for mobilizing public opinion and pressures in support of environmental standards and requirements. The WTO's shrimp-turtle decision,<sup>91</sup> for example, specifically acknowledged the status of NGOs as stakeholders in decision-making.<sup>92</sup>

The challenges ahead are daunting, from the nagging issue of global warming to the appearance offshore of oxygen-starved hypoxic zones. Difficult conundrums of law and policy loom ahead, too, such as those at the intersections of the environment with trade and economic development. For example, the exportability of valuable timber from tropical rain forests has raised critical issues of trade, economic development, and the environment, particularly in the Amazon Basin. Creating or refining institutions and institutional policies to help avoid and resolve complex controversies of this sort will tax the ingenuity, good will and good-faith commitments of private interests and public authorities alike. It seems clear, however, that international environmental law has taken its place, among other influences, in shaping and giving effect to institutional policies that affect natural resources so as to minimize potential harm to the environment.

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87. See *The Paquete Habana, The Lola*, 175 U.S. 677 (1900).

88. *Medellin v. Texas*, 552 U.S. 491 (2008).

89. See, e.g., James A.R. Nafziger, *Treaties*, in *THE OXFORD COMPANION TO AMERICAN LAW* 809, 809-11 (Kermit L. Hall ed., 2002).

90. Vienna Convention for the Protection of the Ozone Layer, *supra* note 43.

91. Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R (Oct. 12, 1998).

92. *Id.* ¶¶ 83-86, 91.

