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International Problems in the Management of the Surface Water of the Iberian Peninsula

by

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> The challenge ahead for us is to transcend the self-interest of our respective nation-states . . . to embrace a broader self-interest--the survival of the human species in a threatened world.[1]

Portugal and Spain share the water as well as the land of the Iberian peninsula. Their sharing of surface waters creates a measure of dependance on the Portuguese side which is not reciprocal: Approximately 70% of Portugal's surface supplies of fresh water is taken from rivers that arise in Spain; discounting for flowage contributions from Portugal's share of the river

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[1] Statement of Thomas McMillan, Canadian Minister of the Environment, before the World Commission on Environment & Development, Ottawa, Canada, May 26, 1986, quoted in Stephen McCaffrey, International Organizations and the Holistic Approach to Water Problems, 31 Nat. Resources J. 139, 139 (1991).

basins, 40% or more of actual surface water flow in Portugal comes down from Spain.[2] Spain, which is currently using between 25% and 40% of its available water resources,[3] receives virtually none of its surface fresh water from Portugal, and only negligible quantities from rivers flowing down from the French side of the Pyrenees.[4] Spain's only risk is from backflooding behind Portuguese dams.

Perhaps because the relationship is not reciprocal, there has not been an extensive history of cooperative management or even of negotiated sharing of the waters in question. The only treaties relating to water between the countries are agreements to consult before undertaking hydroelectric projects which might affect similar projects in the other country.[5] This arrangement largely eliminates any risks from unacceptable backflooding. Nor has the joining of the European Community served to address the questions relating to shared waters in the Iberian peninsula: The Community, thus far, has advised the two countries to resolve such questions by themselves.

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[2] Maria da Conceiçao Silva, Water Resources Planning and Irrigation in the Peninsula 1 (Working Paper, JNCIT/NAS/USAID Workshop on Water Resources at Ericeria, Portugal, April 13-15, 1983) (manuscript in the possession of the author). Another author has estimated that 60% of Portugal's surface water flows down from Spain. Joaquim Evaristo da Silva, Transboundary Water Resources Conflicts in the Iberian Peninsula 2 (unpub. monograph, 1987; manuscript in the possession of the author).

[3] da Conceiçao Silva, supra note 2, at 4.

[4] See, e.g., The Lake Lanoux Arbitration (France v. Spain), 24 I.L.R. 101 (1957), digested in 53 Am. J. Int'l L. 156 (1959).

[5] See part II of this paper.

Portugal currently faces shortages resulting both from its own rising demands for water and from rising water consumption in Spain, intensifying water pollution coming down from Spain, and an apparent Spanish plan to cite its only nuclear waste disposal cite along the Duoro River just above the Spanish-Portuguese border. On the other hand, Spanish works provide some benefits to water users in Portugal through regularizing the flows, (potentially) reducing the flows in wet periods and (more frequently) increasing flows during dry periods.[6] On balance, the problems appear to outweigh the benefits, especially as the operation of some Spanish dams has in fact exacerbated flooding problems in Portugal rather than stemming floods through the regularization of flows.[7]

While Spain also must confront concerns about sharply rising demands for water brought on by a growing population and rapid industrialization, Spain can do so largely without concern about activities within neighboring countries. Spanish uses, however, have reached a scale to threatens long-standing Portuguese uses and not simply the ability of Portuguese water users to initiate new uses.[8] Thus far, Spain has been unwilling to enter into discussions with Portugal about Spanish water management policies.

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[6] da Conceiçao Silva, supra note 2, at 21-22.

[7] See part I(B) of this paper. See generally Evaristo da Silva, supra note 2, at 6-7.

[8] da Conceiçao Silva, supra note 2, at 3.

This paper examines the situation in the Iberian peninsula in light of international law. The paper also raises certain questions about the practical strategies available to Portugal for persuading Spain to become more sensitive to Portuguese needs in planning and managing fresh water in Spain. Ultimately, I will argue, the needs of the two nations can only be met by a system of joint management based on new institutions designed to fairly represent and accommodate both sets of interests.

I. The Political Geography of the Iberian Peninsula

Viewed in terms of national average precipitation, neither Spain nor Portugal can be considered a water-poor country.[9] But the precipitation is concentrated in a brief rainy season during the winter, with as much as 30% of the total sometimes falling during a single month.[10] Similarly, the rain and snow are concentrated in the more mountainous parts of the peninsula, leaving some low-land regions arid, and in the case of southwestern Spain, a virtual desert. In Portugal, while precipitation averages about 900 mm./yr., the range is from 3000 mm./yr. in some parts of the mountainous north to less than 500 mm./yr. in portions of the Algarve.[11]

While irrigation works in the Iberian peninsula date back to antiquity in the peninsula, irrigation never existed on the scale

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[9] Evaristo da Silva, supra note 2, at 1.

[10] Id.

[11] Id.

that modern technology makes possibly and it became, if anything, less widespread with the expulsion of the Moors.[12] Truly large-scale hydraulic works only began in the nineteenth century. As the peninsula's hydrologic data suggests, these hydraulic works focused on the storage of water for needs during the dry season, including initially for hydroelectric generation[13] and recently for irrigation.[14] Later, large-scale works were undertaken to transport water from storage sites in the wetter parts of the peninsula to the dryer parts. All of this activity took place within one or the other country, without significant cooperation between them apart from the sharing of information and consultations on the means of avoiding direct collisions between their works.[15]

The topography of the peninsula, whereby Spain is upstream from Portugal, leaves Portugal vulnerable to injury from Spanish activities with no equivalent vulnerability on the part of Spain. Because of recent trends in urban and industrial development, occurring in both countries but more advanced in Spain, the water managers in the peninsula have in the past two decades come to be concerned about pollution and other steps necessary to upgrade the environment.[16] The new approaches emphasize more efficient

[12] Ludwik Teclaff, Water Law in Historical Perspective 27 (1985); da Conceiçao Silva, supra note 2, at 6-7.

[13] Evaristo da Silva, supra note 2, at 3.

[14] da Conceiçao Silva, supra note 2, at 4, 6-18.

[15] See part II of this paper.

[16] Evaristo da Silva, supra note 2, at 4.

uses of water, including in agriculture, rather than emphasizing the provision of ever greater amounts for traditional patterns of use.

Almost certainly, integrated management of entire river basins will produce more efficient and more ecologically sound uses of the water than piecemeal development of isolated stretches of the rivers.[17] The joint institutional arrangements relating to the waters shared by the two nations are not designed to cope with such integrated approaches, and the two nations have not yet been able to work out, either directly or by way of their new memberships in the European Community, new arrangements suitable to their needs. The following three examples, one drawn from each of the major river basins shared between Portugal and Spain, illustrate the problems which have recently arisen relative to transboundary water management in the Iberian peninsula.

A. The Aldeadavilla Nuclear Waste Facility

The European Community has imposed a requirement that Spain indicate by 1999 one or more possible locations to store nuclear wastes from Spanish nuclear power plants. In September, 1986, Spain presented to the European Commission a proposal to construct a nuclear waste laboratory on the Duoro River near the village of Aldeavilla.[18] At this point, the Duoro forms the

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[17] da Conceiçao Silva, supra note 2, at 1.

[18] Evaristo da Silva, supra note 2, at 4.

border between Spain and Portugal, shortly before entering Portugal to form the valley from which Port wines come.

The proposed waste storage facility will be less than one kilometer from the middle of the Duoro River, i.e., from Portugal, and any contamination of the river will flow very shortly down into Portugal. Ostensibly, the project is purely for research to test the behavior of the granite formations of the region rather than to create a permanent storage site.[19] Granite is deeply fissured, and the Portuguese are concerned that even experimental work with nuclear wastes in the region will contaminate the Duoro River, particularly if the heat and pressure of drilling the burial chambers multiply or widen the fractures.[20] Despite the opposition of the Portuguese representative on the European Commission, the project was approved by a group of experts appointed by the Commission and funded by the Community.[21]

The Portuguese are also concerned about the probability that the research facility will become the disposal site. They ask why the Spanish picked a research site so close to the Portuguese border when similar granite formations are found throughout Spain.[22] The Portuguese also point to the likely political pressures which will make it difficult to locate the waste

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[19] Id. at 5.

[20] Id. at 6.

[21] Id. at 4.

[22] Id. at 5.

disposal facility elsewhere in Spain where it would threaten large Spanish communities as a reason for considering that the Spanish will stick to Aldeadavilla as their site for the permanent disposal of Spanish nuclear wastes.[23]

While the European Parliament has voted that all nuclear waste facilities should be at least 100 kilometers from any international border,[24] the actions of the Parliament are not binding. Nor have street demonstrations on both sides of the border to protest against the project had any effect.[25] Thus, work on the Aldeadavilla project presses forward.

Portugal is a nonnuclear country. In light of this fact, the Portuguese ask why should have to share any of the risk of disposing of another country's nuclear wastes.[26] Present institutional arrangements appear inadequate to provide an appropriate answer.

B. Flooding and Pollution of the Tagus (Tejo) River

The Tagus River basin includes approximately 30% of Portugal.[27] As one of the major rivers of the Iberian peninsula, numerous dams have been built in both countries for hydroelectric generation, flood control, agriculture, and public water supply.

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[23] Id.

[24] Id.

[25] Id. at 10.

[26] Id. at 6.

[27] Id.

Due to the topography of the basin, the Spanish reservoirs are larger, while the Portuguese reservoirs have small storage capacities.[28] As the Spanish reservoirs immediately upriver from Portugal are operated by private companies which find it most profitable to keep their reservoirs as full as possible at all times, Spanish dams seldom have any excess storage capacity available when flooding threatens.[29] The result has been recurring and intensifying flooding upstream from Lisbon.

Unlike flooding in the Tagus valley, pollution problems within the Portuguese portion of the Tagus are largely a result of Portuguese discharges into the river.[30] Portuguese concerns about Spanish pollution here also focuses on a nuclear facility. A Spanish nuclear power plant at Almaraz uses Tagus River water for cooling. Several years ago, a problem at the plant cause radioactivity all the way down to Lisbon.[31] Despite an agreement with Spain that Spanish authorities would immediately notify Portugal of any problems with the nuclear plant, only one low-level official did so--unofficially--and he was, shortly thereafter, dismissed from his job.[32] While the problem did not become severe enough to suspend the water supply to Lisbon, the

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[28] Id. at 7.

[29] Id.

[30] Id.

[31] Id. at 8.

[32] Id.

Portuguese are naturally apprehensive about the future of this plant.

C. The Alqueva Dam

The Portuguese are constructing the Alqueva Dam on the Guadiana River which will be the largest dam in Portugal, designed to provide irrigation for between 135,000 and 200,000 hectares, hydroelectric generation, and urban and industrial water supply.[33] The dam is the most controversial project in Portugal, the subject of intense debate stretching back over 20 years.[34] In addition to debate about the ecological effects of the project and about its costs and benefits, the dam is vulnerable to Spanish activities above the border.

The Guadiana arises in Spain, and shortly after passing Badajoz forms part of the international border for a reach; Portugal is sovereign over both banks of the river for a considerable stretch, and then the river again becomes the border for the last reach before flowing into the Atlantic Ocean. The Alqueva Dam is to be located entirely within Portugal, but will heavily depend on the uses the Spanish give to the water before it reaches Portuguese territory.

Just upstream from where the river first serves as the border, Spain has developed an irrigation project, supplying

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[33] da Conceiçao Silva, supra note 2, at 19; Evaristo da Silva, supra note 2, at 8.

[34] da Conceiçao Silva, supra note 2, at 22; Evaristo da Silva, supra note 2, at 8-9.

water to about 170,000 hectares.[35] The Spanish have under consideration the expansion of the irrigated area to 400,000 hectares, which could seriously deplete the flow before it reaches the reservoir for the Alqueva Dam. Spain has declared its intention to guarantee the minimum flows of Guadiana during the dry periods, but the International Joint Commission, operating under the 1968 Convention, has been unable to establish the minimum flows or minimum annual volumes to which the guarantee is to apply.[36]

At least in large measure, the International Joint Commission has failed to set minimum rates for the Guadiana because the Portuguese on the Commission have taken a very "soft" stance,[37] exhibiting a typically Portuguese reluctance to confront Spain too directly. In the meantime, Spanish farmers have begun to pump 10 m^3/s. of water directly from the border reaches of the river above the dam.[38] The Spanish might claim this as a legal right should the Joint Commission ever get around to setting guaranteed minimums for the river.[39]

Related to the minimum flow problem is the Spanish pollution of the Guadiana. The city of Badajoz dumps raw sewage into the

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35 Evaristo da Silva, supra note 2, at 9.

36 Id. The 1968 Convention allocated 4 BCM/yr. (billion cubic meters/year: 4,000,000,000 m^3/yr.). See infra note 51.

37 Evaristo da Silva, supra note 2, at 9.

38 Id.

39 Id. at 10.

Guadiana just above the point were it becomes the border.[40] Pollution is not yet covered by any convention between Spain and Portugal, and thus any guaranteed flow could well prove to be unusable in Portugal.

II. Applicable Treaties

Spain has always been very cautious about entering to international agreements or arrangements that might compromise Spanish sovereignty over its resources.[41] Given Spain's consistent upstream situation, it has seldom been in a position to benefit from acknowledging any downstream rights. Portugal, on the other hand, has similarly consistently been reluctant to challenge Spain on water issues, in part because this is a common pattern in the Portuguese approach to their much larger neighbor, but also because of Portugal's uniformly downstream situation offers few obvious bases for bargaining. As a result, the Portuguese have tended to seek only information about Spanish developments while concentrating on building hydroelectric and other hydraulic works in order to better exploit the water available within Portugal.[42]

The first treaty between Portugal and Spain relative to shared water resources was a convention signed in 1866.[43] This

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[40] Id.

[41] Id. at 3.

[42] Id.

[43] Agreement on Regulations of Boundary Waters, signed November 20, 1866, as an Annex to the Convention on Boundaries between

convention required consultations before either signatory would license a private hydraulic work on the international reaches of transboundary rivers. A Convention signed in 1927 divided the international portion of the Duoro River into two parts, allowing Spain to exploit the hydroelectric potential of the first part and Portugal the hydroelectric potential of the second part.[44] The 1927 Convention also contained guarantees of minimum flows.[45]

The 1927 Convention also established a Joint Commission to share information about the development of the hydroelectric potential of the international reaches of the transboundary rivers.[46] The Commission was empowered to decide whether proposed works were incompatible with the provisions of the convention; majority decisions were immediately binding on the parties, but majority decisions had to be approved by the two governments. For majority decisions, approval by the governments is presumed if neither government objects within 30 days of the communication of the decision to the governments.[47] The Convention also provides, theoretically, for recourse to the International Court of Justice should the parties fail to

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Spain and Portugal, signed on September 29, 1864, 129 Consol. T.S. 453.

[44] Convention Between Spain and Portugal to Regulate the Hydro-Electric Development of the International Section of the River Duoro, Aug. 11, 1927, 82 L.N.T.S. 133, art. 2.

[45] Id., arts. 8, 18.

[46] Id., art. 14.

[47] Id., art. 16.

agree.[48] The agreement made no provision regarding the implementation of any judicial award.

An agreement in 1964 extended the authority of the commission over other hydraulic works, introducing a measure of flexibility in the sharing of the hydroelectric potential of the Duoro River.[49] In light of the Portuguese project at Alqueva,[50] the powers of the Joint Commission was extended to the Guadiana River in 1968.[51]

Both Spain and Portugal joined the European Community on January 1, 1986.[52] Because of their memberships, Community standards are being phased in relative to the quality of their waters, reinforcing the already existing tendency to make more efficient and less damaging uses of water already noted.[53] On the other hand, thus far the Community institutions appear to have had no impact on the allocation of water within or between the two nations, or even to protect Portugal from degradation of the water flowing down from Spain by activities above the border.[54]

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[48] Id., art. 21.

[49] da Conceiçao Silva, supra note 2, at 19.

[50] See supra, § II(C).

[51] da Conceiçao Silva, supra note 2, at 19.

[52] Evaristo da Silva, supra note 2, at 4.

[53] See the text supra at note 10.

[54] Evaristo da Silva, supra note 2, at 4.

III. The Customary International Law of International Rivers

In the absence of express international agreements, international law operates through custom (regional or general) developed through a process of claim and counterclaim between states.[55] Customary international law, in its current state of somewhat primitive development,[56] cannot of itself solve the management problems confronting Spain and Portugal. Yet such customary law is not wholly without utility: Customary international law both empowers international actors by legitimating their claims, and limits them by circumscribing the kinds of claims they are permitted to make. In the absence of an enforcement mechanism, however, international law has nothing better to offer than the law of the vendetta.[57]

A. The Customary International Law of International Rivers Generally

Customary international law consists of the practices that states engage in ought of a sense of legal obligation (the opinio

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[55] Water in the Middle East 158-162, 167 (Thomas Naff & Ruth Matson eds. 1984). The classic description of this process is found in Myres McDougal & Norbert Schlei, The Hydrogen Bomb Test in Perspective: Lawful Measures for Security, 64 Yale L.J. 648 (1955). See also Charles de Vissher, Theory and Reality in International Law (1968).

[56] Id. at 157-160.

[57] Water in the Middle East, supra note 55, at 161. See also Richard Bilder, Some Limitations of Adjudication as an International Dispute Settlement Technique, 23 Va. J. Int'l L. 1 (1982); Richard Falk, The Beirut Raid and the International Law of Retaliation, 63 Am. J. Int'l L. 415 (1969).

juris).[58] Practices which crystallize as customary international law can include treaties or other agreed arrangements,[59] informal decisions reflected by votes in international assemblies,[60] decisions by courts or international arbitrators,[61] or unilateral actions. The writings of well-respected scholars (termed "the most highly qualified publicists" in the Statute of the International Court of Justice)[62] of international law often contain significant evidence of what those practices are and whether those practices arise from an opinio juris or from other motives unrelated to law.

Space permits only a summary description of the customary international law applicable to shared surface water bodies.[63]

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[58] Myres McDougal, Harold Lasswell, & Ivan Vlasic, Law and Public Order in Space 116 (1963).

[59] That treaties to which a particular state is not a party might be evidence of a custom binding on that state, see McDougal, Lasswell, & Vlasic, supra note 58, at 82-82, 115-19; Julius Stone, Legal Controls in International Law 135 (1954). But see Friedrich Berber, Rivers in International Law 128-37 (R.K. Bastone trans. 1959); Charles Hyde, 1 International Law 12 (2d ed. 1945).

[60] Hersch Lauterpacht, The Development of International Law by the International Court (1958); Shabtai Rosenne, 2 The Law and Practice of the International Court 611-13 (1965); Michael Akehurst, The Hierarchy of Sources in International Law, 47 Brit. Y.B. Int'l L. 273 (1975).

[61] Christopher Joyner, U.N. General Assembly Resolutions and International Law: Rethinking the Contemporary Dynamics of Norm-Creation, 11 Cal. W. Int'l L.J. 445 (1981).

[62] Statute of the International Court of Justice, 59 Stat. 1055, T.S. 993, art. 38(1)(d) (1945).

[63] For illustrative works describing the law of international surface waters, see International L. Comm'n, Report on the Law of Non-Navigational Uses of Rivers, Y.B. Int'l L. Comm'n, A/CN.4/Ser. A, 1971-1988; Berber, supra note 59; Brij Chauhan,

For non-navigational uses of water, international claims and counterclaims have followed a predictable pattern, depending on the riparian status of the state making the claim. To begin with, all states agree that only riparian states--states across which, or through which, a river flows--have any legal right, absent agreement, to use the water of a river.[64] Beyond that simple point, however, the patterns of claim and counterclaim initially diverge sharply according to whether the claimant-state is an upper or a lower riparian.

The uppermost riparians base their claims on "absolute territorial sovereignty".[65] They claim the right to do whatever they choose to with the water regardless of its effect on other riparians. Downstream states begin with a claim to the "absolute integrity of the river".[66] The lower riparians thus claim that

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Settlement of Water Law Disputes in International Drainage Basins (1981); Georges Kaeckenbeeck, International Rivers (1962); Richard Bilder, International Law and Natural Resources Policies, 20 Nat. Resources J. 452 (1980); Jan Hostie, Problems of International Concerning Irrigation of Arid Lands, 31 Int'l Affairs 61 (1955); Ludwik Teclaff, Fiat or Custom: The Checkered Development of International Water Law, 31 Nat. Resources J. 45 (1991); Albert Utton, International Waters, in Waters and Water Rights Pt. IX (Robert Beck ed. 1991).

64 Water in the Middle East, supra note 55, at 166-167.

65 Water in the Middle East, supra note 55, at 164-165. This theory was eloquently once expressed by U.S. Attorney-General Harmon, 21 Op. Att'y Gen. 274, 281-282 (1898). This "Harmon Doctrine" has been disapproved by the U.S. State Department, Memorandum to the Legal Advisor, Nov. 23, 1942, in 3 Marjorie Whiteman, Digest of International Law 950-954 (1964).

66 Water in the Middle East, supra note 55, at 165; Lester, River Pollution in International Law, 57 Am. J. Int'l L. 828, 832 (1963).

upper riparians can do nothing that affects the quantity or quality of water that flows down to them.

Often the lower riparians, particularly those wedged along a river so as to be both upper and lower riparians on the same stream, come around to a theory of "restricted sovereignty."[67] By this claim, the riparian state recognizes the right of all riparians to use some water from a single source and the obligation to manage that use so as not to interfere with the like uses of other riparian states. The quantity of water to which each state is entitled might be defined according to some historic pattern of use, although occasionally some other more or less objective measure of need is advanced (population, area, arable land, etc.), or it might not be more developed than the vague notion that each state is entitled to a "reasonable share" of the water.

Eventually some modus vivendi has been worked out on most international river systems based on the notion of restricted sovereignty--nearly 100 such treaties had entered into force by 1950, and more have followed.[68] International judicial and arbitral awards are to a like effect.[69] The respected publicists

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67 Water in the Middle East, supra note 55, at 165-166.

68 Berber, supra note 59; Report of the U.N. Commission for Europe, Legal Aspects of Hydro-Electric Development of Rivers and Lakes of Common Interest, 95-152 U.N. Doc. E/ECE/136 (1952); Herbert Smith, The Economic Uses of International Rivers (1931); Utton, supra note 63, § 49.03(a).

69 See, e.g., Case of the Territorial Jurisdiction of the Int'l Comm'n of the Oder River, [1929] P.C.I.J., ser. A, No. 23 at 27; The Lake Lanoux Arbitration (France v. Spain), 24 I.L.R. 101, 139

of international law are in virtual unanimous agreement on the same point.[70]

Still, some international agreements relating to shared water resources have gone further to embrace what might be described as a "community of property" in the watersource.[71] Under the community of property concept, the waterbasin is jointly developed and managed as a unit without regard to international borders, coupled with an agreed sharing of the benefits of that development and management.[72] The concept of an international drainage basin is widely supported by naturalists,

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(1957), digested in 53 Am. J. Int'l L. 156, 170 (1959). See generally Utton, supra note 63, § 49.03(b).

[70] See generally International L. Assoc., The Helsinki Rules on the Uses of the Waters of International Rivers (Rep. of the 52d Conf., adopted at Helsinki, Aug. 20, 1966) (hereafter cited as Helsinki Rules); Berber, supra note 59, at 25, 272-274; I. Murphy & J. Eleanora Sabadell, The Resolution of International Water Conflicts: A Comparative Study (unpublished paper presented to the World Congress of Political Science, Paris, 1985) (manuscript in the possession of the author); Daniel O'Connell, International Law 556-558 (2d ed. 1970); 1 Lassa Oppenheim, International Law 474-475 (8th ed., Hersch Lauterpacht ed. 1955); Smith, supra note 66, at 150-51; Ludwik Teclaff, The River Basin in History and Law 152 (1967); Dominique Alheritiere, Settlement of Public International Disputes on Shared Resources: Elements of a Comparative Study of International Instruments, in Transboundary Resources Law, supra note 63, at 139-149; Juraj Andrassy, L'Utilization des Eaux des Bassins Fluviaux Internationaux, 16 Revue Egyptienne de Droit International 23 (1960); Dante Caponera, Patterns of Cooperation in International Water Law, in Transboundary Resources Law 1, 3-10 (Albert Utton & Ludwik Teclaff eds. 1987); Aziza Fahmi, International River Law for Non-Navigable Rivers with Special Reference to the Nile, 23 Revue Egyptienne de Droit International 39 (1967); Sayed Hosni, The Nile Regime, 17 Revue Egyptienne de Droit International 70 (1961); Utton, supra note 63, § 49.03(e).

[71] Utton, supra note 63, § 49.03.

[72] L.F.E. Goldie, Equity and the International Management of Transboundary Resources, in Transboundary Resources Law, supra note 66, at 103-137.

engineers, and economists, as well as jurists.[73] Ludwik Teclaff elaborated the concept in a well-known book entitled The River Basin in Law and History.[74] There are good reasons for believing that the practice of nations will move in this direction as well.

Even if each actor were to agree to the concept of water as a shared resource which requires recognition that the sovereignty of each riparian state is limited relative to the water, there would still be disputes over what should be the common standard and its proper application. Such disputes would ultimately lead back to the law of the vendetta. Serious conflict in one form or another cannot be avoided if there is no mechanism for peacefully investigating and resolving the inevitable disputes which becomes the distinguishing characteristic of the restricted sovereignty theory and will undoubtedly push nations towards the model of a community of property approach to shared water resources.[75]

B. The Pronouncements of International Organizations

The International Law Association is a nongovernmental organization of legal experts which was founded in 1873.[76] In 1954, the Association undertook a project to codify the law relating to the shared uses of international rivers. The result was the "Helsinki Rules on the Uses of the Waters of

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[73] McCaffrey, supra note 1, at 143.

[74] Teclaff, supra note 63.

[75] Water in the Middle East, supra note 55, at 171-173.

[76] McCaffrey, supra note 1, at 141.

International Rivers," adopted in 1966.[77] These Helsinki Rules were the first attempt by any international organization to codify the entire body of the law of international watercourses.[78]

The Helsinki Rules are centered on the concept of international drainage basins, watersheds extending over two or more states, as the indivisible hydrologic unit on the basis of which planning must occur to assure the "maximum utilization and development of any portion of its waters."[79] The Helsinki Rules explicitly inlcude within this concept all tributaries (including tributary groundwater), and not simply the international watercourse itself.[80] Within a drainage basin, the Helsinki Rules embraced the concept of restricted sovereignty through adoption of a rule of "equitable utilization."[81] The International Law Association has continued to draft rules relating to water-centered activities not addressed directly by the Helsinki rules, including rules relating to flood control

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[77] Helsinki Rules, supra note 63.

[78] McCaffrey, supra note 1, at 141.

[79] Helsinki Rules, supra note 63, at 7-8 [art. II & comment (a)].

[80] Id. at 7-8.

[81] Id., art. IV. The phrase "equitable utilization" is similar in both phrasing and in meaning to the rule of "equitable apportionment" applied by the Supreme Court of the United States to interstate disputes over surface waters shared between the disputing states--a system that has barely functioned in a society with a strong judicial structure to resolve disputes between users. See, e.g., New Jersey v. New York, 283 U.S. 336 (1931); Connecticut v. Massachusetts, 282 U.S. 660 (1931); Kansas v. Colorado, 206 U.S. 46 (1907).

(1972), pollution (1972 & 1982), navigability (1974), the protection of water installations during armed conflicts (1976), joint administration (1976 & 1986), flowage regulation (1980), general environmental management concerns (1980), and groundwater (1986).[82]

Other public and quasi-public international organizations have made similar pronouncements. Most significantly, the International Law Commission, an organ of the United Nations, in 1982 acknowledged the virtually unanimous recognition of the rule of "equitable utilization" as a general rule of international law.[83] The Institut de Droit International, the Inter-American Bar Association, and the New York University Research on International Law reached similar conclusions.[84]

The ongoing work of the International Law Association has developed a second principle that each nation "ensure" that acts within that nation not cause "substantial damage" to the environment or the natural condition of the waters beyond the

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82 See generally McCaffrey, supra note 1, at 144-50.

83 Jens Evenson, Third Report on the Law of Non-Navigational Watercourses, Y.B. Int'l L. Comm'n 47 (34th sess. 1982). See also McCaffrey, supra note 1, at 150-61.

84 Institut de Droit International, Utilization of Non-Maritime International Waters (Except for Navigation), art. 2 (Sept. 4-13, 1961); Inter-American Bar Ass'n, Resolution on Principles of Law Governing the Uses of International Rivers and Lakes (1957); N.Y.U. School of Law, Research Project on the Law and Uses of International Rivers 197-98 (1959) (hereafter cited as N.Y.U. Research).

limits of the nation's jurisdiction.[85] A similar principle was also reported by the studies of the International Law Commission.[86] Section 601 of the Restatement (Third) of Foreign Relations Law also indicates that states must "take such measures as may be necessary, to the extent practicable under the circumstances" to avoid injury to neighboring states.[87]

Carried to its logical extreme, such a principle would result in a position requiring the absolute integrity of the water system, a position that, while frequently advocated by lower-riparian states, has never in fact been adopted by international decision-makers.[88] The requirement is thus variously stated as prohibiting only "appreciable harm," "sensible harm," "significant harm," "substantial harm," or the like.[89] Furthermore, these pronouncements recognize that whether harm is in excess of one or another of these standards is to be determined only in the context of determining whether a use is reasonable or equitable relative to controversies over equitable utilization.[90] As the German federal supreme court stated in the

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85 See, e.g., International L. Ass'n, Rules on the Relationship between Water, Other Natural Resources and the Environment, art. I (adopted at Belgrade, 1980).

86 Evenson, supra note 83, at 74.

87 Restatement (Third) of Foreign Relations Law § 601 (1987). See also N.Y.U. Research, supra note 84, at 197.

88 See the text supra at note 67.

89 Evenson, supra note 83, at 93-98.

90 Id., at 99-107; Helsinki Rules, Commentary to Art. X, at 19-20; International L. Ass'n, supra note 85, art. 1. See generally McCaffrey, supra note 1, at 144-50; Utton, supra note 63, §§

Danauversinkung Case (WÜrttemberg v. Baden),[91] "[o]ne must consider not only the absolute injury caused to the neighboring State, but also the relation of the advantage gained by one to the injury caused to the other."[92]

C. The Spanish Precedent

The leading text on international water management in Portugal has unequivocally endorsed the principle of equitable sharing of transboundary waters.[93] On the other hand, Spain, vis-à-vis Portugal, has embraced the typical upper-riparian state's claim of absolute territorial sovereignty.[94] When considered by any impartial decision-maker, this Spanish claim is even vulnerable than such claims by other upper-riparian states as Spain itself has successfully espoused the rule of the

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49.04, 49.10. Unlike Jens Evenson, special rapporteur for the International Law Commission's project relating to the Law of the Nonnavigational Uses of International Watercourses when the Third Report was written, Stephen McCaffrey, the current special rapporteur for the project, has declared that the rule of "no harm" is primary over the rule of "equitable utilization." Stephen McCaffrey, The Law of International Watercourses: Some Recent Developments and Unanswered Questions, 17 Den. J. Int'l L. & Pol'y 505, 509-10 (1989).

[91] Ann. Digest & Rep. of Pub. Int'l L. Cases 128 (RGst. 1927). See also Third Report, supra note 83, at 100.

[92] See generally Utton, supra note 63, §§ 49.05, 49.06

[93] Luis Veiga da Cunha, Vito Alves de Figueiredo, Mário Lino Correia, & António dos Santos Gonçalves, Management and Law for Water Resources 211-24, 241-43 (1977).

[94] See the text supra at notes 65-66.

absolute integrity of the river in a dispute with France, The Lake Lanoux Arbitration.[95]

Lake Lanoux is a small lake, located entirely in France; from Lake Lanoux, a small river flows into the Carol River, which flows into Spain. The French government proposed to divert the waters of the Carol River over a precipitous 780-meter drop into the Ariege River to generate electricity. Originally, France claimed the right of absolute sovereignty as its basis for doing so. When Spain complained that this project could not be undertaken without its consent, the French eventually promised to divert water (equivalent in volume and quality) downstream from the project from the Ariege to replenish the Carol River before it entered Spain.

France and Spain agreed to arbitration to determine whether the proposed action would violate Spanish rights. Because of the plan to restore the Carol river as to both the quantity and the quality of its waters before the river entered Spain, the arbitration panel held that the planned works would not violate either customary international law or Spanish rights under the Treaty of Bayonne[96] by which the two nations had agreed to coordinate hydroelectric development of their shared waters. In reaching this conclusion, the tribunal clearly indicated that the

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[95] The Lake Lanoux Arbitration (France v. Spain), 24 I.L.R. 101 (1957), digested in 53 Am. J. Int'l L. 156 (1959).

[96] Signed, May 29, 1866, 56 Brit. & For. State Papers 212.

rule of international law relative to shared water resources was the rule of restricted sovereignty.[97]

D. An Aside on Groundwater

The Helsinki Rules included only those groundwaters that formed part of a drainage basin, that is, that contributed to the principle streams, lakes, or other common terminus of the relevant watershed.[98] While there is far less experience regarding disputes over aquifer management, the same principles would no doubt be applied by analogy.[99] A gathering of experts on the law of international water recently confirmed this conclusion in a meeting at Bellagio, Italy, where the drafted a model treaty to assure the equitable utilization and management of shared groundwater basins.[100]

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[97] 101 I.L.R. at 139, 53 Am. J. Int'l L. at 170.

[98] Helsinki Rules, supra note 63, at 8 [comment (b)].

[99] International Groundwater Law (Ludwik Teclaff & Albert Utton eds. 1981).

[100] Robert Hayton & Albert Utton, Transboundary Groundwaters: The Bellagio Draft Treaty, 29 Nat. Resources J. 663 (1989). See also International L. Ass'n, International Rules on Groundwater, Report of the Sixty-Second Conference 21, 231-85 (Seoul, 1986); Julio Barberis, The Development of International Law of Transboundary Groundwater, 31 Nat. Resources J. 167 (1991); Julio Barberis, Le regime juridique international de eaux souterraines, 33 Annuaire Français de Droit International 130 (1987); Utton, International Groundwater Management: The Case of the U.S.-Mexican Frontier, 57 Neb. L. Rev. 633 (1978).

IV. Dispute-Settlement Mechanisms

Neither existing agreements between Spain and Portugal nor customary international law will yield definite rules about what either nation can or cannot do relative to their shared rivers. Nor have the institutions of the European Community been willing to turn their attention to the problems of water management in Iberian peninsula. The European Community first began to take an interest in environmental affairs in the early 1970s as a means of preventing environmental regulations from serving as hidden trade barriers, but subsequently has come to be concerned about protecting and improving the natural environment.[101] By now, the Community has issued some 150 directives, regulations, and decisions relating to the environment, but these have nearly all concerned the setting of uniform minimum standards for environmental quality; the Community organs have had virtually nothing to say about allocating scarce resources across national boundaries.[102] The recent creation of a European Environmental Agency is unlikely to change this pattern as that agency is

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[101] Thomas Bunge, European Environmental Law: Community Legislation and Member States' Competences under the EEC Treaty, 59 Rev. Jur. U.P.R. 669, 670 (1990). See generally Environmental Law of the European Communities (W. Burhenne ed. 1990); E. Rehbinder & Richard Stewart, Environmental Protection Policy (1985); Christian Zacker, Environmental Law of the European Economic Community: New Powers under the Single European Act, 14 B.C. Int'l & Comp. L. Rev. 249, 261-64 (1991); Gerard Curtin, jr., Note, Regulation 1210/90: Establishment of the European Environmental Agency, 14 B.C. Int'l & Comp. L. Rev. 321, 321-25 (1991).

[102] Id. at 670-71.

merely empowered to gather data and to establish standards for the reporting of data.[103]

The Single European Act amended the Treaty of Rome in 1987 to provide that ensuring a prudent and rational utilization of natural resources as one of the legislative competencies of the European Community.[104] This provision resolves any questions about the competence of the Community to involve itself in resource allocation decisions, and such decisions, when made, will clearly prevail over inconsistent national laws.[105] Still, the clear focus of the new treaty provisions is on the prevention of environmental damage rather than the allocation of shared resources.[106]

Should the European Community turn its attention to resource allocation disputes, the lengthy process necessary to adopts any new directive, regulation, or decision, assures that no prompt results can be expected from this quarter.[107] Furthermore, decisions relating to environmental management are required to be

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[103] Regulation 1210/90, Council Regulation of May 7, 1990, O.J. L120/1 (1990). See generally Curtin, supra note 101, at 325-31.

[104] 30 O.J. L169/1, arts. 130r, 130s (1987) (hereafter cited as Single European Act).

[105] Bunge, supra note 101, at 676-79, 683-90.

[106] Single European Act, supra note 104, art. 130r(2).

[107] Bunge, supra note 101, at 673-76, 681-83; Zacker, supra note 101, at 251-61, 264-78; Linda Sheehan, Comment, The EEC's Proposed Directive on Civil Liability for Damage Caused by Waste: Taking over When Prevention Fails, 18 Ecol. L.Q. 405 (1991); Felicia Wartnik, Comment, Waste Liability and the European Economic Community: An Analysis of a Proposed Directive on Civil Liability for Damage Caused by Waste, 2 Colo. J. Int'l Envtl. L. & Pol'y 429 (1991).

unanimous, although the Council of the Community is empowered to define--by unanimous vote--issues which can be decided by a qualified majority rather than unanimity.[108] This leaves allocation resolutions firmly in the hands of the contending states.

The Economic Commission for Europe, operating under the auspices of the United Nations, also does not provide a water-allocation or a dispute-resolution mechanism. The Commission has adopted three instruments relative to international water management. The "Declaration of Policy on Prevention and Control of Water Pollution, Including Transboundary Pollution," merely indicates that "rational utilization of water resources" is to be basic element of long-term water management.[109] This was followed by a "Declaration of Policy on the Rational Use of Water," which recommended a "unified strategy" and "coordinated utilization."[110] Finally, the Commission adopted "Recommendations to ECE Governments on Long-Term Planning of Water Management," which endorse basin-wide, cooperative management of shared water resources.[111]

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[108] Single European Act, supra note 104, art. 130s. Thus far, the power to define nonunanimous issues has been used solely with regard to the setting of technical standards. Sheehan, supra note 107, at 413 n.63.

[109] Decision B (XXXV), adopted at the 35th Sess. (1980), in Economic Comm'n for Europe, Two Decades of Co-Operation on Water, U.N. Doc. ECE/ENVWA/2, at 1, 3 (1988) (hereafter cited as ECE).

[110] Decision C (XXXIX), in ECE, supra note 101, at 12, 15.

[111] ECE, supra note 101, at 39, 41.

No solution is possible without the creation of the necessary law: If a cooperative management system is to be put in place in the Iberian peninsula, it must entail the creation of a legal mechanism not only capable of resolving disputes, but also capable of providing for considerable active cooperation in the joint management of resources.[112] The hydrologic and managerial imbalances between Spain and Portugal, however, are likely to make such solutions difficult to attain unless Spain accepts the twin rules of equitable utilization and no appreciable harm.[113] Consider such an apparently simple matter as the invèntorying of the water available to a country.

Effective management of water a nation without a true inventory of the quantity and quality of available water. For Portugal, such an inventory is impossible without substantial Spanish cooperation.[114] Spain not only does not require foreign cooperation to inventory its waters, but it's system of water management is considerably more advanced than in Portugal.[115]

Under the present circumstances, intense disputes appear to be inevitable. Conflict would be likely even under if the existing agreements between Portugal and Spain tied the consumption of water more effectively to an objective measure of need (historic use, arable acreage, etc.). The situation is even

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[112] See generally Utton, supra note 63, §§ 49.03. 49.05, 49.06.

[113] See part III of this paper.

[114] Evaristo da Silva, supra note 2, at 4.

[115] See supra § IV.

worse, however, as the rights of the two states have been largely left to measurement by the vaguely-defined standard of equitable utilization tempered by the right not to be appreciably harmed. While Spain seems to be in clear violation of these norms, Portugal has limited means for redressing these wrongs.

What the situation in the Iberian peninsula requires is the creation, by agreement between the interested states, of a formal legal regime to manage actively the water resources shared between them.[116] A formal legal regime would have to create a system of cooperative management in a structure capable of determining the facts of water use in each nation, to resolve disputes between the interested nations, to guide responses to unusual temporary shortfalls of water, to regulate long-term answers to the serious permanent shortages, and to enforce its decisions. The two nations, however, have thus far shown little interest in negotiating such an arrangement. Portugal should undertake to initiate such negotiations and attempt to persuade Spain that its self-interest would also be furthered by such arrangements. Given the hydrologic and political imbalance between the two states, encouragement by the institutions of the European Community might be necessary to bring Spain around.

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[116] Stephen McCaffrey, The Law of International Watercourses: Ecocide or Ecomanagement?, 59 Rev. Jur. U.P.R. 1003 (1990).