ARTICLES

FROM SCHWEIZERHALLE TO BAIA MARE: THE CONTINUING FAILURE OF INTERNATIONAL LAW TO PROTECT EUROPE'S RIVERS

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I. INTRODUCTION

Beginning on January 31, 2000, at least 100,000 cubic meters of highly polluted water escaped from a tailings dam at the Aurul gold mine in Baia Mare, Romania.¹ The water flowed into the Somes, Tisza, and Danube Rivers, causing enormous environmental damage. Most of the damage occurred in Hungary, downstream from Baia Mare. Hungarian politicians called the spill "the first, most serious environment[al] catastrophe in the 21st century," and "the worst ecological disaster in central Europe since Chernobyl in 1986."

More striking than the resemblance to the Chernobyl disaster, though, was the resemblance to another 1986 environmental catastrophe: the Sandoz warehouse fire at Schweizerhalle, near Basel, Switzerland, which released over 10,000 cubic meters of highly contaminated water into the Rhine.⁴ In each of these instances, an international environmental legal regime ostensibly protected the affected river system; however, international law failed to prevent or reduce the impact of the accident in each case.

Fourteen years after the Sandoz spill, Europe's river systems remain unacceptably vulnerable to catastrophic chemical accidents. This article explores the growth of the environmental regime of one such system, the Danube basin, and the weaknesses revealed by the Baia Mare accident.

II. THE BAIA MARE ACCIDENT AND RELATED INCIDENTS

A. Baia Mare

Baia Mare is located in northern Romania near the borders of Hungary and Ukraine. West of Baia Mare, the Somes River flows across the border into Hungary, where it joins the Tisza. The Tisza denotes the Romania-Ukraine border north of Baia Mare. To the east of Baia Mare, between the town of Baia Borsa and the border, the Vaser River flows

¹ Eszter Szamado, *Cyanide Spill is Ecological Crisis: Hungarian Official*, AGENCE FRANCE PRESSE, Feb. 12, 2000 (statement of Zoltna Illes, President of Hungarian parliament's environment committee).

² *Id*.

³ Simon Mann, *Angry Hungary Demands Compensation*, SYDNEY (AUS.) MORNING HERALD, Feb. 10, 2000, at 8 (statement of Hungarian Interior Ministry official Gabor Horvath) [hereinafter Mann I].

⁴ See Aaron Schwabach, The Sandoz Spill: The Failure of International Law to Protect the Rhine from Pollution, 16 ECOLOGY L.Q. 443, 445 (1989) (citing SANDOZ LTD., SCHWEIZERHALLE: THE FIRE ON 1 NOVEMBER 1986 AND ITS AFTERMATH 4, 14 (1987)) [hereinafter Sandoz Spill].

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into the Viseu, which joins the Tisza at the border.⁵

The Aurul mine at Baia Mare was one of many in northern Romania. When fully operational, the Aurul mine might have produced 50,000 ounces of gold and 250,000 ounces of silver per year. Ownership of the Aurul mine is evenly divided between the Romanian and Australian partners in the venture. The Romanian government owns Remin, the Romanian partner. The directors of the Australian partner, Esmeralda Exploration Ltd., hold 25% of the mining company's shares.

Tailings from the mine are collected behind a tailings dam.¹⁰ The tailings are mixed with a cyanide solution to aid in extracting the metal from the ore.¹¹ During the month of January, ice and snow built up on the dam, causing water levels behind the dam to rise to levels higher than normal.¹² There is still some dispute as to the date and cause of the dam failure, but on January 30 or 31, the water overtopped the dam or the dam burst.¹³ For the next four to five days, water containing cyanide and heavy metals flowed over the dam into the local creek system, and from there into the Somes (known in Hungary as the Szamos).¹⁴ As noted, the Somes joins the Tisza in Hungary; the Tisza flows through Hungary and (very briefly) Slovakia and Ukraine, before entering Yugoslavia and joining the Danube upstream from Belgrade.¹⁵ The polluted water thus ended up in the Hungarian portion of the Tisza.

After the accident, a water monitoring station at Szolnok in Hungary measured cyanide levels more than 700 times the usual amounts;¹⁶ nine days later, the levels were still twenty-eight times the maximum safe

⁵ See, e.g., EUROMAP, ROMANIA, MOLDAVIA (map) (1999).

⁶ Mann I. supra note 3.

⁷ Esmeralda owns 50% of Aurul S.A., which owns the Aurul S.A. Tailings Retreatment Project at Baia Mare. *See* Australian Stock Exchange Company Announcements, Mar. 15, 2000, 2000 WL 16709113.

⁸ Mann I, supra note 3.

⁹ See Karen Middleton & Sharon Kemp, How It Happened, THE WEST AUSTRALIAN, Feb. 10, 2000, at 4, 2000 WL 6251420.

¹⁰ "Tailings" are "residue separated in the preparation of various products (as grains or ores)." WEBSTERS NINTH NEW COLLEGIATE DICTIONARY 1202 (1986).

¹¹ See Death on the Danube, ECONOMIST, Feb. 19-25, 2000, at 53.

¹² See Middleton, supra note 9.

¹³ Esmeralda Chairman Brett Montgomery maintains that there was an overflow, rather than structural failure of the dam. *See* Middleton, *supra* note 9.

¹⁴ See Middleton, supra note 9; See also Trevor Sykes, A Fishy Side to the Great Hungarian Cyanide Hysteria, AUSTRALIAN FINANCIAL REV., Feb. 12, 2000, at 14, available at 2000 WL 3977245

¹⁵ See The Balkans, NATIONAL GEOGRAPHIC, Feb. 2000 (map insert) [hereinafter The Balkans]

¹⁶ See Mann I, supra note 3; See also Middleton, supra note 9 ("800 times the acceptable level").

level. ¹⁷ The Hungarian authorities banned fishing and all contact with the water of the Somes; it appears that all animal life in the Hungarian section of the Somes was killed. ¹⁸ The spill continued to move downstream with the current, contaminating the Tisza, which provides drinking water for two million Hungarians. Some industrial facilities were closed and authorities provided schools and hospitals with distilled water. ¹⁹

Near Csongrad, far downstream from the accident, cyanide levels were twenty times the allowed maximum.²⁰ Emergency services blocked the river with barges and filled railway cars with dead fish scooped from the river.²¹ One Hungarian leader said of the river, "[i]t is as if a neutron bomb had been detonated. All the living organisms have been destroyed."²² By February 11, the spill had reached the border between Hungary and Yugoslavia.²³ Yugoslav authorities reported an initial cyanide level of 0.13 milligrams per liter, falling to .07 milligrams per liter later in the day.²⁴ Serbian authorities prohibited use of the waters of the Tisza (known in Yugoslavia as the Tisa).²⁵ Serbian environment minister Branislaw Blazic declared, "[t]he Tisza has been murdered . . . this is an absolute catastrophe."²⁶

By February 19, the Tisza was almost entirely lifeless over the nearly 1,000 kilometer stretch between the Somes and the Danube. Hungarian and Yugoslavian workers had removed more than 100 metric tons of fish from the Tisza. ²⁷ Fishermen along the river hung black banners from their houses and bridges; the Tisza fishing industry had employed 15,000 people. ²⁸

Damage to the Danube, a much larger river, was less severe. At the Iron Gates I Dam on the Yugoslav-Romanian border, cyanide levels were still measurably above safe levels for fish.²⁹ Thus the "toxic bullet" of

¹⁷ See Mann I, supra note 3.

¹⁸ See Middleton, supra note 9.

¹⁹ See Mann I, supra note 3.

²⁰ See Romanian Cyanide Spill a "European Catastrophe", AGENCE FRANCE PRESSE, Feb. 10, 2000, available at 2000 WL 2730898 [hereinafter European Catastrophe].

²¹ See id.

²² Szamado, *supra* note 1 (statement of Zoltna Illes).

²³ See id.

²⁴ See id. Professor Bozo Dalmacija of the University of Novi Sad (in Yugoslavia) stated that 0.1 mg/l is the maximum amount considered safe. Four and one half milligrams of cyanide (or 45 liters of water with the maximum "safe" concentration) will kill a human; much smaller amounts will kill fish. See id.

²⁵ See id.

²⁶ Fred Bridgland, Nothing Is Alive. Zero, SUNDAY HERALD, Feb. 20, 2000, at 13, available at 2000 WL 4100629.

²⁷ Death on the Danube, supra note 11.

²⁸ See id; Bridgland, supra note 26.

²⁹ See Cyanide Pollution in Danube Still Cause for Concern, M2 Presswire, Feb. 22, 2000,

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cyanide and poisonous metals, after causing destruction in four other states, returned to its state of origin. ³⁰

The damage to the Tisza had severe short-term economic and environmental effects and may also have significant long-term effects. For example, the bed of the Tisza may remain contaminated with heavy metals for the next five years.³¹ In addition to the destruction of the fishing industry and the contamination of the river bed by heavy metals, some species of animals unique to the Tisza may become extinct.³²

B. Other Spills

No watercourse disaster would be complete without a few echoes. To some extent, a particularly serious spill serves to focus attention on smaller spills that might otherwise be overlooked. Unscrupulous plant operators, however, may also take advantage of the larger disaster to conceal smaller "accidental" releases of wastes.

In northern Romania, a combination of heavy precipitation and a period of unusually cold temperatures impounded large quantities of water; rising temperatures then caused flooding throughout the region. In combination with the region's mining industry, which operates with smaller margins for safety than might be tolerated in some wealthier countries, this flooding contributed to at least three serious toxic accidents.³³

Eastern Europe, of course, is an environmentally troubled region. Industrial towns such as Baia Mare have paid a serious price for decades of poorly regulated development: the life expectancy in Baia Mare is 63 years, six years less than the Romanian average.³⁴ In 1999, a release of toxic waste in Yugoslavia severely damaged the Timok River, whose confluence with the Danube marks the border between Yugoslavia, Romania, and Bulgaria.³⁵ After the Baia Mare spill, a smaller spill of cyanide from a northern Romanian coal mine into the Somes added to the contamination.³⁶ Two spills at a zinc and lead mine at Baia Borsa released more than

available at 2000 WL 12935372.

³⁰ Bridgland, supra note 26.

³¹ See Death on the Danube, supra note 11.

³² See Mann I, supra note 3.

³³ See generally Romanian Mine Accidents: Environmental Disaster in Central Europe (visited March 20, 2000) http://www.zpok.hu/~jfeiler/baiamare/index.htm. This website, maintained by the Hungarian National Society of Conservationists and Friends of the Earth, provides complete, frequently updated information about the spills and their effects. See id.

³⁴ See Some Residents See a Choice of Dying of Hunger Now or From Effects of Pollution Later; Spills Reveal Danger Lurking in Polluted Region in Romania, ORLANDO (FLA.) SENTINEL, Mar. 12, 2000, at A-18 [hereinafter Danger Lurking].

 $^{^{35}}$ See Death on the Danube, supra note 11.

³⁶ See Mann I, supra note 3.

20,000 tons of toxic sludge, containing heavy metals, into the Vaser.³⁷ The waste flowed into the Viseu and the Tisza upstream from the Somes, contaminating parts of the river spared from the Baia Mare spill.³⁸ World Wide Fund for Nature spokesperson Jan Korabov also made the Chernobyl comparison: "It would not be an exaggeration to put what has happened here in the past few weeks on a par with Chernobyl."³⁹ Korabov pointed out that the effects of the Baia Borsa spills on river life might have been far more catastrophic but for the fact that almost all of the river life had been killed by the Baia Mare spill. ⁴⁰ Recognizing the continuing danger of such spills, Romanian environment minister Romica Tomescu stated that 41 mines in Romania were known to be in a dangerous condition.⁴¹

C. Reactions to the Spill

While Hungary and Yugoslavia reacted with outrage, Esmeralda, the Australian mining company, reacted with almost complete denial. Esmeralda chairman Brett Mongomery said that the Hungarian government had "grossly exaggerated" the amount of damage.⁴² Hungarian Foreign Ministry spokesperson Gabor Horvath responded that "a person who calls a five-kilometer long carpet of dead fish floating along the river 'grossly exaggerated' is either genuinely unaware of the facts or wants to ignore them."

Montgomery also said that the fish may have been killed by a natural increase in the turbidity or salinity of the river. ⁴⁴ He referred to a conspiracy against Esmeralda and said he had not considered the spill to be a major problem until he was contacted by the Mining Protection Institute, who threatened to make the spill "an international political issue." ⁴⁵

Esmeralda claimed that environmental standards in Romania were at least as high as those in Australia. Montgomery claimed that Esmeralda was not liable for any damage caused by the spill, because the site was

³⁷ See Another Mine Spill Poisons Rivers in Romania, Hungary, Env't News Serv., Mar. 11, 2000, available in 2000 WL 7838254; Danger Lurking, supra note 34; Michael Leidig, New Mine Disasters "Waiting in Wings," SOUTH CHINA MORNING POST, Mar. 16, 2000, at 14, available at 2000 WL 14846236.

³⁸ See The Balkans, supra note 15.

³⁹ Leidig, supra note 37

 $^{^{40}}$ See id.

⁴¹ See id.

⁴² European Catastrophe, supra note 20.

⁴³ *Id*.

⁴⁴ See Simon Mann et al., Warnings "Ignored" Before Cyanide Spill, SYDNEY (AUS.) MORNING HERALD, Feb. 11, 2000, at 7, available at 2000 WL 2310919 [hereinafter Mann II].

⁴⁵ Id.

⁴⁶ See Mann I, supra note 3.

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owned by the Romanian company Aurul S.A., which had "extensive insurance." He did not, however, follow the example set in 1986 by then Sandoz director Hans Winkler and make a public appearance to allow protesters to pelt him with dead fish. 48

Denial of reality is rarely a successful long-term strategy. On February 10, 2000, the Australian Stock Exchange suspended trading in Esmeralda's stock; the price by that point had fallen to 20 cents (Australian) per share.⁴⁹ In March, the company voluntarily entered receivership,⁵⁰ provoking outrage in Hungary,⁵¹ and was delisted from the stock exchange.⁵²

Australia found itself politically divided by the catastrophe. While some sided with Esmeralda, ⁵³ Australia's Greens and Democrats insisted that Australia's environmental laws should be applied to Australian mining companies operating overseas. ⁵⁴ Green Senator Bob Brown pointed out that such incidents damaged Australia's prestige as well as the environment, while Democrat Senator Andrew Bartlett agreed that "companies like Esmeralda had proved [that] they could not behave like Australian ambassadors. ⁷⁵⁵ Bartlett also stated that "there needs [sic] to be binding codes of conduct and compulsory environmental bonds to cover clean-up costs in the event of disaster such as this, ⁷⁵⁶ adding that "non-binding codes of conduct clearly don't work[.]" Australian Environment Minister Robert Hill, however, responded that "[t]he Federal Government's position is that it's up to other countries to set their own standards."

Hungary's Foreign Ministry announced that it would "make all the possible diplomatic and legal steps to enforce Hungarian compensation demands." Foreign Ministry official Gabor Horvath stated, "we will use

⁴⁷ Mann II. supra note 44.

⁴⁸ See Sandoz Spill, supra note 4, at 451.

⁴⁹ See Peter Gosnell, No Evidence on Europe Fish Kill, Australasian Business Intelligence, THE DAILY TELEGRAPH (Aus.), Feb. 11, 2000, available at 2000 WL 13993758.

⁵⁰ See Martin Parry, Australian Miner in Voluntary Administration, AGENCE FRANCE PRESSE, Mar. 16, 2000, available at 2000 WL 2754188.

⁵¹ See, e.g., Australian Company Regrets Spill, ASSOCIATED PRESS, Mar. 17, 2000, available at 2000 WL 16860358 (stating that Hungary planned to seek millions in compensation from mine owners).

⁵² See id. (asserting that media coverage left the company with "no option" other than to have its listing removed from the Australian Stock Exchange).

⁵³ See generally, e.g., Sykes, *supra* note 14 (asserting that claims of the Hungarian government and environmentalists describing severe damage caused by the cyanide spill were exaggerated and politically motivated).

⁵⁴ See Middleton, supra note 9.

⁵⁵ *Id*.

⁵⁶ *Id*.

⁵⁷ *Id*.

⁵⁸ *Id*.

⁵⁹ *Id*.

international public law as well as international private law to seek and claim restitution for whatever damage has been done to my beautiful country." Horvath noted, however, that such relief would be sought against Romania and Esmeralda, but not against Australia: "There is no Australian state participation in the mine." Serbian environment minister Branislaw Blazic announced a similar intention to seek compensation. 62

Romania quickly distanced itself from Esmeralda. Romania's deputy minister for environmental protection, Virgil Diaconu, said "[w]e have issued repeated written warnings over the past year to the plant, asking [Esmeralda] to check again all their technological equipment." Aurul was reportedly fined the equivalent of \$1,360 (Australian) for the accident.

European Commission vice-president Loyola de Palacio opined that the spill was "a true European catastrophe," adding that the European Union might offer financial assistance. She invoked the "polluter pays" principle, stating that "[t]here is a clear principle in the EU that in general, who contaminates will pay for the restitution, although full restitution here is impossible. In the aftermath of the spill, arrangements were made for a United Nations team to inspect the Baia Mare site in March, 2000. Recognizing that the existing legal regime was inadequate to protect the river, Romania and Hungary signed a protocol on the prevention of environmental pollution at Debrecen, Hungary, on March 16, 2000.

III. THE BAIA MARE SPILL AND INTERNATIONAL LAW

The Baia Mare and Baia Borsa spills, like the 1986 Sandoz spill, were classic cases of transboundary harm to an international water-course: in all three situations, an industrial accident in the territory of an upper riparian caused harm to the watercourse in the territory of lower riparians. Over the past century, international law dealing with such events has evolved considerably, although significant gaps still exist.

⁶⁰ Mann I, supra note 3.

⁶¹ European Catastrophe, supra note 20.

⁶² See Bridgland, supra note 26.

⁶³ Mann II, supra note 44.

⁶⁴ See Mann I, supra note 3. As of March 17, 2000, \$1,360 Australian was equivalent to \$824.70 U.S. See Exchange Rates, WALL ST. J., Mar. 20, 2000, at C-13 (\$1.00 (Aus.) was worth 60.64 cents U.S. on Friday, Mar. 17, 2000).

⁶⁵ European Catastrophe, supra note 20.

⁶⁶ Id.

⁶⁷ See generally United Nations Environment Program, Cyanide Spill at Baia Mare, Romania (March 2000), at http://www.unep.ch/roe/baiamare.pdf (last visited August 31, 2000).

⁶⁸ See id. At the time of this writing, the text of the Debrecen agreement was not available in English; E-mail from Zsuzsanna Kocsis-Kupper, legal adviser (environment), Republic of Hungary, to Aaron Schwabach, Mar. 21, 2000.

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The Danube basin is to some extent governed by a treaty regime, although gaps in that regime may be filled by customary international law.

A. Sources of International Law

For purposes of this article it will be simplest to consider two categories of international law. The first, conventional international law, includes rules of law set out in written form and affirmatively agreed to by states; treaties and other international agreements fall in to this category. The second category is customary law. In the absence of applicable conventional law, rules of international law may be derived from "international custom, as evidence of a general practice accepted as law."69 Customary law thus consists of those rules that, although not formalized by international agreement, are followed by states out of a sense of legal obligation. In addition to these two categories, "[g]eneral principles of law" have traditionally been viewed as a third category of public international law.⁷⁰ However, they can also be seen as "supplementary rules" or a "secondary source of law."⁷¹ For example, judicial decisions and the teachings of the most qualified publicists are a "subsidiary means for the determination of rules of law."⁷² In any event, domestic judicial decisions and, to the extent that a state actually observes them, general principles of law are state practice, and thus form the basis for normative expectations.

B. Treaties and International Agreements Protecting the Waters of the Tisza and the Danube Basin

There is a considerable body of treaty law governing the uses of the waters of the Danube basin, including the Somes, the Vaser, and the Tisza. Many of these treaties are primarily concerned with navigation, the defining of borders, and undertakings such as the Iron Gates and Gabcikovo-Nagymaros projects. There are also some specifically environmental agreements, as well as environmental provisions in navigation treaties.⁷³

⁶⁹ Statute of the International Court of Justice, art. 38(1), 59 Stat. 1055, 1060 (1945), BBCJ: 20.4.5 (a)(ii) [hereinafter ICJ].

⁷¹ See, e.g., RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES § 102(4) cmt. 1 & Reporter's Note 7 (1987).

⁷² ICJ, supra note 69.

⁷³ For a detailed chronology of the Danube treaty regime, see Ludwik A. Teclaff, Fiat or Custom: The Checkered Development of International Water Law, 31 NAT. RESOURCES J. 45, 51-56 (1991). See also Pascale Costa, Les effets de la guerre sur les traites relatifs au Danube, dans le cadre d'une etude globale du droit conventionnel du Danube, in THE LEGAL REGIME OF INTERNATIONAL RIVERS AND LAKES/LE REGIME JURIDIQUE DES FLEUVES AT DES LACS INTERNATIONAUX 203-45 (Ralph Zacklin & Lucius Caflisch eds., 1981) (not available in Eng-

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Prior to World War I, environmental preservation for its own sake was rarely a goal of government policy in Europe or elsewhere. Some Danube treaties from that period include quasi-environmental provisions primarily intended to preserve the river's navigability and to prevent the introduction of diseases from Turkey to Europe.⁷⁴

After World War I, the political map of the Danube basin underwent significant changes. Three major riparian states – the Ottoman Empire, the German Empire, and the Austro-Hungarian Empire – ceased to exist. In their place appeared what twelve years ago might still have been a recognizable political map of Eastern Europe.

As with the pre-war treaties, the Treaties of Versailles and Trianon made extensive provisions for the regime of navigation on the Danube but said little about non-navigational uses of the river. By 1921, the new navigation regime had been codified in the Definitive Statute of the Danube. Although the post-war treaties actually reflected less concern with quarantine and sanitary regulations, new non-navigational concerns began to appear. In particular, Article 293 of the Treaty of Trianon set up a Hydraulic System Commission with jurisdiction over non-navigational uses of much of the Danube basin. Article 293 was a revolutionary document; it foreshadowed the drainage basin approach to international

lish).

⁷⁴ See, e.g., Public Act of the European Commission of the Danube Relative to the Navigation of the Mouths of the Danube, Nov. 2, 1865, Annex A, art. LXIV, 131 Consol. T.S. 399, 422-23 [hereinafter Public Act of 1865]; Regulations of Navigation and Police Applicable to the Danube Between Galatz and the Mouths, Drawn up by the European Commission of the Danube, May 19, arts. 26, 73, 158 Consol. T.S. 245, 250-51, 259 1881) [hereinafter European Commission Regulations of 1881] (restricting discharges of ballast and cinders). For a detailed description of these restrictions, see Aaron Schwabach, *Diverting the Danube: The Gabcikovo-Nagymaros Dispute and International Freshwater Law*, 14 BERKELEY J. INT'L L. 290, 314-17 (1996) [hereinafter *Diverting the Danube*].

⁷⁵ Treaty of Peace With Germany, June 28, 1919, arts. 331-39 (dealing with navigable international rivers generally), 346-53 (dealing with the Danube specifically), 225 Consol. T.S. 189, 355-57, 360-61 [hereinafter Treaty of Versailles]; Treaty of Peace Between the Allied and Associated Powers and Hungary, June 4, 1920, arts. 120 (surrendering the Danube Flotilla), 275-91 (dealing with navigation on the Danube), 314 (binding Hungary to adhere to treaties regarding international transport concluded by the Allied and Associated powers within the coming five years); TREATIES, CONVENTIONS, INTERNATIONAL ACTS, PROTOCOLS, & AGREEMENTS BETWEEN THE UNITED STATES AND OTHER POWERS, 1910-1923, S. DOC. No. 67-348, at 3539, 3666-70, 3670-71, 3679 (1923) [hereinafter Treaty of Trianon]. *See also* Treaty of Peace Between Austria-Hungary, Bulgaria, Germany, Turkey, and Romania, May 7, 1918, arts. 24-26 (dealing with the regime of navigation on the Danube), 223 Consol. T.S. 256, 263-64.

⁷⁶ Convention Instituting the Definitive Statute of the Danube, July 23, 1921, 26 L.N.T.S. 173 [hereinafter Definitive Statute].

⁷⁷ Treaty of Trianon, *supra* note 75, art. 274; Arrangement and Final Protocol Relative to the Exercise of the Powers of the European Commission of the Danube, Aug. 18, 1938, art. 12, 196 L.N.T.S. 113, 119 [hereinafter Treaty of Sinaia].

⁷⁸ Treaty of Trianon, *supra* note 75, art. 293.

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watercourse administration, attempting to create a single unified authority for non-navigational uses of an entire (or almost entire) drainage basin.⁷⁹

Article 293 also provided that "[a]ny dispute which may arise out of the matters dealt with in this Article shall be settled as provided by the League of Nations." Later, the Treaty of Sinaia provided for arbitration as well. The post-war treaties thus anticipated the need to resolve disputes arising from conflicting non-navigational uses and from conflicts between navigational and non-navigational uses. The Treaty of Trianon provided that the tribunal resolving such conflicts would make "due allowance in its decision for all rights in connection with irrigation, water power, fisheries, and other national interests, which, with the consent of all the riparian States or of all the States represented on the International Commission, shall be given priority over the requirements of navigation." Thus, Trianon represented a step in the transition to a world in which rivers are primarily valued for their non-navigational uses.

After World War II, however, the river system seems to have declined in relative political importance. Whereas the Treaty of Trianon devotes nineteen articles to the Danube, 83 the Treaty of Paris contains a single "[c]lause Relating to the Danube," which provides that international traffic on the Danube should be free and open to the nationals of all States. 84

From 1945 to 1989, most of the lower Danube Basin was effectively under the control of a single, relatively minor riparian state: the Soviet Union. Thus, the post-war regime of navigation on the river (which added little in the way of environmental provisions) replaced the previous two-commission regime with a single-commission system. Furthermore, the old non-riparian participants in the navigation regime (Britain, France, and Italy) were completely excluded from participation. France, and

Other non-environmental Danube-specific treaties, which nonetheless contained some environmental provisions, dealt with the Iron Gates and

⁷⁹ See id.

⁸⁰ Id.

⁸¹ Treaty of Sinaia, supra note 77, art. 21.

⁸² Id. art. 282.

⁸³ See id. arts. 274-293. In addition, Articles 268-73 discuss transit through Hungarian territory (including transit on the Danube), and Articles 27, 30, and 31 relate to the Danube and its tributaries as frontiers. *Id.* The Treaty of Versailles contains an additional 17 clauses relating to the Danube. *See* Treaty of Versailles, *supra* note 75, arts. 331-39 (general clauses relating to the Elbe, the Oder, the Niemen, and the Danube), 346-53 (special clauses relating to the Danube).

⁸⁴ Treaty of Peace with Hungary, Feb. 10, 1947, 41 U.N.T.S. 135, at art. 38 (English text begins on page 168) [hereinafter Treaty of Paris].

⁸⁵ See Convention Regarding the Regime of Navigation on the Danube, Aug. 18, 1948, 33 U.N.T.S. 181 (English text begins at page 197) [hereinafter Belgrade Convention].

⁸⁶ See id. (Britain, France, and Italy are not parties to the Convention).

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Gabcikovo-Nagymaros projects.⁸⁷ The post-war era also saw a dramatic increase worldwide in the number of treaties dealing specifically with environmental concerns.

In 1958, the lower riparian states began efforts to protect fisheries in the

87 Agreement Concerning the Establishment of a River Administration in the Rajka-Gonyu Sector of the Danube, Feb. 27, 1968, Czechoslovakia-Hung., 640 U.N.T.S. 50 (English text begins at page 66); Treaty Concerning the Construction and Operation of the Gabcikovo-Nagymaros System of Locks, Sept. 16, 1977, Czechoslovakia-Hung., 1109 U.N.T.S. 235, 32 I.L.M. 1247. The agreements concerning the Iron Gates project were contained in twelve separate documents, all signed at Belgrade on November 30, 1963:

- (1) Agreement Between the Socialist Federal Republic of Yugoslavia and the Romanian People's Republic Concerning the Construction and Operation of the Iron Gates Water Power and Navigation System on the River Danube, Nov. 30, 1963, Rom.-Yugo., 512 U.N.T.S. 18 (English text begins at 512 U.N.T.S. 42).
- (2) Convention Between the Government of the Socialist Federal Republic of Yugoslavia and the Government of the Romanian People's Republic Concerning the Preparation of Designs for the Iron Gates Water Power and Navigation System on the River Danube, Nov. 30, 1963, Rom.-Yugo., 512 U.N.T.S. 68 (English text begins at 512 U.N.T.S. 94).
- (3) Convention Between the Government of the Socialist Federal Republic of Yugoslavia and the Government of the Romanian People's Republic Concerning the Execution of Works for the Iron Gates Water Power and Navigation System on the River Danube, Nov. 30, 1963, Rom.-Yugo., 512 U.N.T.S. 124 [hereinafter "Iron Gates Works Treaty"] (English text begins at 512 U.N.T.S. 152).
- (4) Convention Between the Government of the Socialist Federal Republic of Yugoslavia and the Government of the Romanian People's Republic Concerning Compensation for Damage Caused by the Construction of the Iron Gates Water Power and Navigation System on the River Danube, Nov. 30, 1963, Rom.-Yugo., 512 U.N.T.S. 184 (English text begins at 512 U.N.T.S. 208).
- (5) Convention Between the Government of the Socialist Federal Republic of Yugoslavia and the Government of the Romanian People's Republic Concerning The Determination of the Value of Investments And Mutual Accounting In Connection with the Construction of the Iron Gates Water Power and Navigation System on the River Danube, Nov. 30, 1963, Rom.-Yugo., 513 U.N.T.S. 6 (English text begins at 513 U.N.T.S. 56).
- (6) Convention Between the Government of the Socialist Federal Republic of Yugoslavia and the Government of the Romanian People's Republic Concerning The Operation of the Iron Gates Water Power and Navigation System on the River Danube, Nov. 30, 1963, Rom.-Yugo., 513 U.N.T.S. 110 (English text begins at 513 U.N.T.S. 126).
- (7) The Statute of the Mixed Yugoslav-Romanian Commission for the Iron Gates, Nov. 30, 1963, Rom.-Yugo., 513 U.N.T.S. 144 (English text begins at 513 U.N.T.S. 154).
- (8) Protocol Concerning Crossing of the Yugoslav-Romanian State Frontier in Connexion With the Construction of the Iron Gates Water Power and Navigation System on the River Danube, Nov. 30, 1963, Rom.-Yugo., 513 U.N.T.S. 166 (English text begins at 513 U.N.T.S. 184).
- (9) Protocol Concerning the Settlement of Certain Questions in Connexion with the Construction and Operation of the Iron Gates System, Nov. 30, 1963, Rom.-Yugo., 513 U.N.T.S. 208 (English text begins at 513 U.N.T.S. 220).
- (10) Exchange of Letters Constituting an Agreement Concerning Credit, Nov.
- 30, 1963, Rom.-Yugo., 513 U.N.T.S. 232 (English text begins at 513 U.N.T.S. 238).
- (11) Exchange of Letters Constituting an Agreement Concerning the Adjustment of the Frontier on the Danube, Nov. 30, 1963, Rom.-Yugo., 513 U.N.T.S. 244 (English text begins at 513 U.N.T.S. 248).
- (12) Final Act Relating to the Establishment and Operation of the Iron Gates Water Power and Navigation System on the River Danube, Nov. 30, 1963, Rom.-Yugo., 512 U.N.T.S. 6 (English text begins at 512 U.N.T.S. 12).

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Danube. 88 Romania, Yugoslavia, 89 and the Soviet Union were parties to the 1958 Fisheries Convention; Hungary joined in 1961. 90 Articles 1 and 3 of the Convention defined the area governed by the treaty in a way that would exclude almost all of the Tisza and all of the tributaries of the Tisza affected by the Romanian spills. 91 The Danube itself and the Tisza at its junction with the Danube in Yugoslavia, however, would be covered by the Convention. Under the Convention, Romania was obligated "to work out and apply measures to prevent the contamination and pollution of the river . . . by . . . waste from industrial and municipal undertakings which are harmful to fish and other aquatic organisms[.]" The spills themselves are evidence, however, that any such measures that might have existed in Romania were either inadequate or improperly applied.

The Convention did create an obligation on the part of Romania toward Hungary; however, this obligation was not violated in the Baia Mare and Baia Borsa spills, as none of the waters in Hungary covered by the treaty were affected by the accident. The same was true of Ukraine, which is not a party to the treaty; the Soviet Union's rights and responsibilities have passed to the Russian Federation. The state currently known as Yugoslavia is apparently not a party either, though its status is less clear. If (as seems likely) the contracting parties were forming obligations vis-à-vis each other, rather than mutually agreeing to undertake some form of obligations *erga omnes*, Romania did not violate any obligation to Yugoslavia.

In the context of the Baia Mare and Baia Borsa spills, the most significant treaties currently in force between Romania and at least some of the affected downstream states are the United Nations Convention on the Protection and Use of Transboundary Watercourses and Interna-

⁸⁸ Convention Concerning Fishing in the Waters of the Danube, Jan. 29, 1958, Bulg.-Rom.-U.S.S.R.-Yugo., 339 U.N.T.S. 23 (English text begins at page 58) [hereinafter Danube Fisheries Convention].

⁸⁹ The state then known as Yugoslavia was a party to the treaty. All other references to Yugoslavia in this article are to the state presently using the name "Federal Republic of Yugoslavia."

⁹⁰ See Globelaw, http://globelaw.com/sources.htm.

⁹¹ Danube Fisheries Convention, *supra* note 88, arts. 1, 3; *See generally The Balkans*, *supra* note 15.

⁹² Danube Fisheries Convention, *supra* note 88, art. 7.

⁹³ See id. See generally The Balkans, supra note 15.

⁹⁴ The Environmental Treaties and Resource Indicators database at the Center for International Earth Science Information at Columbia University lists the present parties to the treaty as Bulgaria, Hungary, Romania, and Russia. *See, e.g.*, Globelaw, http://globelaw.com/sources.htm (visited Mar. 22, 2000).

⁹⁵ For a discussion of the difficulties in assessing the international legal rights and responsibilities of the successor states to the former Yugoslavia, see Paul R. Williams, *The Treaty Obligations of the Successor States of the Former Soviet Union, Yugoslavia, and Czechoslovakia: Do They Continue in Force?* 23 DENV. J. INT'L L. & POL'Y 1 (1994).

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tional Lakes⁹⁶ and the Convention on Cooperation for the Protection and Sustainable Use of the Danube River.⁹⁷

Romania, Hungary, Ukraine, and Slovakia are all parties to the U.N. Convention. ⁹⁸ Under the U.N. Convention, Romania is obligated to "take all appropriate measure . . . to prevent, control, and reduce pollution of waters causing or likely to cause transboundary impact" and to minimize the risk of accidental pollution. ¹⁰⁰ Romania failed to comply with these regulations; the appropriate measure would have been to require a more secure containment structure for the mine tailings, or perhaps to require monitoring of water buildup behind the tailings dam and ameliorative measures when the buildup reached a certain level. Romania apparently did not, however, fail in its duty to warn Hungary "about any critical situation that may have transboundary impact," although Ukraine and Hungary have expressed dissatisfaction over Romania's lack of communication regarding the details of the accidents. ¹⁰²

While the U.N. Convention incorporates the equitable use concept, ¹⁰³ it also incorporates the three canons by which much of international environmental law is interpreted: the precautionary principle, ¹⁰⁴ the "polluter-pays" principle, ¹⁰⁵ and the principle of inter-generational equity. ¹⁰⁶ All of these principles, however, tend to protect the environment at the expense of development and, thus, work against Romania in the present

 $http://untreaty.un.org/English/sample/EnglishInternetBible/partI/chapterXXVII/treaty19.asp \quad (visited August 31, 2000).$

^{96 31} I.L.M. 1312 (1992); 31 I.L.M. 1599 (1992), in force Oct. 6, 1996 [hereinafter U.N. Convention]. Hungary approved the Convention on Sept. 2, 1994; Romania ratified on May 31, 1995, and Slovakia and Ukraine acceded on July 7, 1999 and Oct. 8, 1999, respectively. Yugoslavia is not a party. All four of the former states are also signatories to a protocol on waterborne diseases, not yet in force. 1999 Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, available at http://untreaty.un.org/English/notpubl/27-5a-enng.htm; information on signatories and ratific atvailable

⁹⁷ Convention on Cooperation for the Protection and Sustainable Use of the Danube River [hereinafter Danube Protection Convention], *at* the website of *The University of Ljubljana*, http://ksh.fgg.uni-lj.si/danube//envconv/index.htm (visited Aug. 31, 2000) (entered into force Oct. 22, 1998). Hungary, Romania, and Ukraine are all signatories to the Convention. *See* Globelaw, http://globelaw.com/sources.htm.

⁹⁸ See supra note 966.

⁹⁹ U.N. Convention, *supra* note 96, arts. 2.2-2.2(a).

¹⁰⁰ See id. art. 3.1(l).

¹⁰¹ Id. art. 14.

¹⁰² See generally Romanian Mine Accidents: Environmental Disaster in Central Europe, at http://www.zpok.hu/~jfeiler/baiamare/index.htm.

¹⁰³ See U.N. Convention, supra note 96, art. 2.2(c); see also art. 3.

 $^{^{104}}$ See id. art. 2.5(a).

¹⁰⁵ See id. art. 2.5(b).

¹⁰⁶ See id. art. 2.5(c).

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situation.

The U.N. Convention does not, however, make specific provisions for liability or compensation in the event of transboundary harm. For example, Article 7 (Responsibility and Liability) provides only that "[t]he Parties shall support appropriate international efforts to elaborate rules, criteria and procedures in the field of responsibility and liability." Article 10 provides for consultations "at the request of any . . . [p]arty," whereas Article 22 provides for settlement of disputes "by negotiation or any other means of dispute settlement acceptable to the parties to the dispute." ¹⁰⁹

Romania, Hungary, Ukraine, and Slovakia are all signatories to the Convention on Cooperation for the Protection and Sustainable Use of the Danube; of the four, all but Ukraine have ratified or otherwise become parties to the Convention, which provides similar protections to the river, although with greater specificity. 110 The Convention also incorporates the precautionary and polluter-pays principles, although not the inter-generational equity principle. 111 The Danube Protection Convention is nonetheless "greener" than the U.N. Convention, 112 as it sets a standard of sustainable, rather than equitable, use. 113 It imposes similar duties to "prevent, control and reduce transboundary impact" from pollution. 114 For example, "[o]re preparation" is specifically listed as a hazardous activity. 115 There are also duties to warn of accidental pollution, 116 and to consult with affected lower riparians. 117 Romania's violation of or compliance with these various provisions would be essentially the same as under the U.N. Convention. The Danube Protection Convention does, however, offer a stronger dispute resolution mechanism. Article 24 of the Convention is worded somewhat differently from Article 22 of the U.N. Convention, in a way that suggests that acceptance of

¹⁰⁷ *Id.* art. 7.

¹⁰⁸ Id. art. 10.

¹⁰⁹ *Id.* art. 22.1. Article 22.2 provides for compulsory submission to the International Court of Justice (ICJ) or arbitration if a nation declares in writing that it accepts one or both of the means of dispute settlement. *See id.* art. 22.2. None of the states involved in the current situation have made such a declaration.

¹¹⁰ See Danube River Protection Convention, at http://www.rec.org/DanubePCU/drpc.html.

¹¹¹ See Danube Protection Convention, supra note 97, art. 2(4); see also Annex I, Part 2.2. The Convention also continues the functions of the 1985 Bucharest Declaration on the Cooperation of the Danubian Countries on Problems of Danubian Water Management. See id., art. 19.

¹¹² See id. pmbl.

¹¹³ See id. arts. 2(3), 2(5).

¹¹⁴ See id. arts. 5(1), 5(2), 6(c).

¹¹⁵ Id. Annex II, Part 1.1(c).

¹¹⁶ See id. arts. 16(3).

¹¹⁷ See id. arts 12(f), 11.

compulsory jurisdiction of the ICJ or arbitration is the norm. 118 In order to accept compulsory jurisdiction of the ICJ, however, parties must make an affirmative declaration separate from the acceptance or ratification of the treaty itself. 119 Article 24 does provide for compulsory arbitration where states have made no declaration and have not resolved a particular dispute within twelve months. 120 Annex V provides detailed arbitration guidelines.¹²¹

The Danube Protection Convention also sets up an International Commission for the Protection of the Danube River, 122 with binding rule-making powers within its area of competence. 123 The Commission began to operate on a provisional basis even before the Convention entered into force. On April 12, 1998, it undertook a project "[t]o promote the international cooperation relating to an integrated approach to the management of the Tisza River Basin," as well as "[t]o identify the joint base for an Integrated Tisza River Basin Plan[.]"124 The project was assigned to an Irish group, ESB International, and was originally scheduled for completion on April 6, 2000. 125

Another convention that, if in force, would also be applicable to the Baia Mare situation is the Espoo Convention on Environmental Impact Assessment in a Transboundary Context. 126 The Espoo Convention would require its parties to prepare environmental impact assessment documentation for proposed activities that "are likely to cause significant adverse transboundary impact." Thus, Romania would have been obligated to require Aurul S.A. to produce detailed environmental impact assessment documentation. 128 In addition, under the Espoo Convention, Romania should have notified Hungary and invited it to participate. 129 Furthermore,

¹¹⁸ See id. art. 24(1).

¹¹⁹ See id. arts. 24(2)(b), 24(2)(c).

¹²⁰ See id. arts. 24(2)(a), 24(2)(e).

¹²¹ See id. Annex V.

¹²² See id. Annex IV.

¹²³ See id. Annex IV, arts. 4, 5.

¹²⁴ International Cooperation for River Basin Management in the Danube River Basin http://www.rec.org/DanubePCU/flyers/coop_1.html (visited Mar. 22, 2000).

¹²⁵ See id.

¹²⁶ Convention on Environmental Impact Assessment in a Transboundary Context, Feb. 25, 1991, 30 I.L.M. 800 [hereinafter Espoo Convention]. Hungary, Romania, Ukraine, and Slovakia are all signatories to the Convention but have not ratified it. See Globelaw, http://globelaw.com/sources.htm (naming the countries that have ratified the treaty). By its terms, the Espoo Convention will enter into force ninety days after the sixteenth instrument of ratific ation is deposited. See Espoo Convention art. 18.

¹²⁷ Id. art. 2(2).

¹²⁸ For a detailed description of the required documentation, see Espoo Convention, arts. 1(vi), 2(7), 4, and Appendix II. See id.

¹²⁹ See id. art.3.

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after the documentation was produced "without undue delay", Romania should have entered into consultations with Hungary concerning ways in which the adverse impact might be reduced or eliminated.¹³⁰ The Espoo Convention is not in force, however, and the incomplete Danube treaty regime offers no equivalent.

Overall, the treaty regime protecting the Danube is far less comprehensive than that protecting Europe's other great international river, the Rhine. The Rhine treaty regime includes, *inter alia*, a treaty creating a multinational Commission charged with the protection of the river against pollution, at treaty seeking to protect the river from chemical pollution, with detailed lists of prohibited and restricted pollutants, and a convention dealing with the specific problem of chloride pollution from the French potassium mines in Alsace. There are also regional treaty commissions charged with protecting specific tributaries or regions of the Rhine, such as the Saar, the Moselle, and Lake Constance. Also, unlike the Danube, the Rhine is largely protected by European Union law, since most of the riparian states of the Rhine are also members of the EU.

C. Customary International Law Governing the Use of the Waters of Transboundary Watercourses

Although Romania evidently violated its obligations under the U.N. Convention to Ukraine, Hungary, and Slovakia, it did not violate its obligations to Yugoslavia. Romania may still have a duty to Yugoslavia, however, under customary international law since this body of law may fill any gaps in the set of rights and duties defined by the U.N. Convention.

Customary international law has long recognized limits on the discharge of pollutants into rivers. ¹³⁶ The exact nature and extent of those

¹³⁰ Id. art. 5.

¹³¹ See Sandoz Spill, supra note 4, at 458-66.

¹³² See Vereinbarung uber die Internationale Kommission zum Schutze des Rheins gegen Verunreinigung, Agreement on the International Commission for the Protection of the Rhine Against Pollution, Apr. 29, 1963, 994 U.N.T.S. 3 (entered into force May 1, 1965).

¹³³ See Convention for the Protection of the Rhine Against Chemical Pollution, Dec. 3, 1976, 16 I.L.M. 242, 253-55 (1977).

¹³⁴ See Convention Relative a la Protection du Rhin Contre la Pollution par les Chlorures, Convention on the Protection of the Rhine Against Pollution by Chlorides, Dec. 3, 1976, 16 I.L.M. 265 (1977) (modified in 1991).

¹³⁵ See generally Sandoz Spill, supra note 4, at 460.

¹³⁶ This is a natural extension of the Trail Smelter principle (*see* note 133, *infra*, and accompanying text). One of the earlier declarations of this principle in the past century was in the Donauversinkung case: "When utilizing an international watercourse in its territory, every State is bound by the principle springing from the idea of the community of nations based on international law: that it may not injure another member of the international community." Donau-

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limits, however, are somewhat hard to determine. The right of a down-stream neighbor to receive an uninterrupted flow of uncontaminated water must be balanced against the right of the upper riparian to make equitable use of the river's waters.¹³⁷

The approach generally taken to balance the rights of lower and upper riparian owners is one of limited territorial sovereignty. The territorial integrity interest of the lower riparian is balanced against the territorial sovereignty interest of the upper riparian. Limited territorial sovereignty is not fixed, however, but is a movable point somewhere along a continuum between absolute territorial sovereignty and absolute territorial integrity. Romania had both a sovereign right to exploit resources within its territory and a duty to respect the territorial integrity of lower riparians (such as Yugoslavia) by preventing or minimizing harm from those activities. The exact amount of harm that an upper riparian might be permitted to cause lower riparians in the exercise of its right is, of course, likely to be a highly contentious matter, and has led many environmentalists and scholars to embrace an alternative – the community theory.

A fourth approach to the management of international freshwater resources, the community or drainage basin management theory, ¹³⁹ has yet to find acceptance in the practice of states. While theorists embrace the community theory, states are reluctant to sacrifice their sovereignty to a drainage basin management authority. Furthermore, most upper riparians seem to see the community theory as a product of the environmental movement and as more likely to protect the interests of downstream states.

versinkung case (Baden v. Wurttemberg), 116 Entscheidungen des Reichsgerichts in Zivilsachen, Suppl. Entscheidungen des Staatsgerichtshofs 18, [need source] discussed in Johann G. Lammers, POLLUTION OF INTERNATIONAL WATERCOURSES 433-38 (1984); See also Ann. Digest & Rep. of Pub. Int'l L. Cases 128 (RGZ. 1927). [Need Source]

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¹³⁷ See generally Diverting the Danube, supra note 74, at 325-27.

¹³⁸ For a full discussion of the competing approaches to this question, see generally *Diverting the Danube*, *supra* note 74, at 325-40 (indicating a lack of a high degree of normativeness by using the term "approach" instead of "rule").

¹³⁹ Economic Commission for Europe Declaration of Policy on the Rational Use of Water, Apr. 14, 1984, art. 17, ECE/DEC/C(XXXIX); Bellagio Draft Treaty Concerning the Use of Transboundary Groundwaters, 1989, 1 BASIC DOCUMENTS OF INTERNATIONAL ENVIRONMENTAL LAW 42 (Harald Hohmann ed. 1992) [need source] (for annotated text and discussion, see Robert D. Hayton & Albert E. Utton, *Transboundary Groundwaters: The Bellagio Draft Treaty*, 29 NAT. RESOURCES J. 663 (1989)); Case Relating to the Territorial Jurisdiction of the International Commission of the River Oder, 1929 P.C.I.J. (ser. A) No. 23, at 27 (Sept. 10) (expressing the elements of the community theory); Commission on Sustainable Development, Overall Progress Achieved Since the United Nations Conference on Environment and Development, U.N.Doc. E/CN.17/1997/2/Add. 17, ¶ 21-22 (1997) [need source]; *Water Development and Management: Proceedings of the United Nations Water Conference, Mar del Plata, Argentina* at 53, U.N. Doc. E/CONF.70/29 (1977). *See also Agenda 21*, (vols. I-III), §§18.9, 18.16, 18.35, 18.36, 18.38(g) U.N. Doc. A/CONF.151/26 (1992). [need source]

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The present situation in the Danube Basin is unusual because many of the riparian states did not exist in their present form as little as a decade ago. Thus, it is difficult to make any specific predictions about the conduct of the riparian states based upon their past conduct. In a broader sense, however, the practice of the world's states in similar situations may provide a normative framework within which to evaluate the responsibilities of Romania to Yugoslavia and the other lower riparians.

1. Decisions of International Tribunals

Basic principles of the customary international law of state responsibility for transboundary harm are generally seen as having been developed through the Trail Smelter arbitration, 140 the Corfu Channel case, 141 and the Lake Lanoux arbitration. 142 The Trail Smelter tribunal, in dicta, first expressed the principle that a state has responsibility for environmental damage extending beyond its territorial limits:

[N]o 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 or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.¹⁴³

In the Corfu Channel Case, the International Court of Justice also applied this general principle of limited territorial sovereignty, stating that it is "every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States." The Lake Lanoux arbitration applied the principle to the non-navigational uses of a transboundary watercourse:

[A]ccording to the rules of good faith, the upstream state has the obligation to take into consideration the different interests at stake, to strive to give them all satisfactions compatible with the pursuit of its own interests, and to demonstrate that, on this subject it has a real solicitude to reconcile the interests of the other riparian State with its own.¹⁴⁵

¹⁴⁰ See Trail Smelter Arbitral Tribunal (U.S. v. Can.), 3 R.I.A.A. 1905 (1941), reprinted in 35 AM. J. INT'LL. 684 (1941).

¹⁴¹ See Corfu Channel Case (U.K. v. Alb.), 1949 I.C.J. 4 (Apr. 9) (determination on the merits).

¹⁴² See Lake Lanoux Case (Spain v. Fr.), 12 R.I.A.A. 281 (1957), digested in 53 AM. J. INT'L L. 156 (1959). Two decisions of international courts directly address Danube issues. See Case Concerning the Gabcikovo-Nagymaros Project, 37 I.L.M. 162 (1998); Jurisdiction of the European Commission of the Danube Between Galatz and Braila, Advisory Opinion, 1927 P.C.I.J. (ser. B) No. 14.

¹⁴³ See Trail Smelter Arbital Tribunal, supra note 140, at 716.

¹⁴⁴ See Corfu Channel Case, supra note 141, at 21-22.

¹⁴⁵ Lac Lanoux Case, *supra* note 142, at 169.

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2. Aspirational Documents and Pronouncements of International Bodies

Public and private international organizations have also addressed the problem of transboundary environmental harm. While the aspirational documents thus produced create no legally binding obligations, they may serve to show "the general principles of law recognized by civilized mtions[.]"¹⁴⁶ To the extent that they are promulgated (especially in the case of General Assembly resolutions) by certain states and not by others, they may also provide insight into the practice or expectations of those states.

a. The Stockholm Declaration

Principle 21 of the United Nations' Stockholm Declaration on the Human Environment¹⁴⁷ is generally viewed as having attained the status of customary international law. ¹⁴⁸ Principle 21 provides that states have the "sovereign right to exploit their own resources pursuant to their own environmental policies[.]" Along with this right, though, comes 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." The Stockholm Declaration thus incorporates the *Corfu Channel* standard that no state may allow its territory to

¹⁴⁶ Statute of the International Court of Justice, art. 38(1), 59 Stat. 1055, 1060 (1945), T.S. No. 993, 3 Bevans 1153, 1976 U.N.Y.B. 1052.

¹⁴⁷ Report of the United Nations Conference on the Human Environment, U.N. Doc. A/CONF.48/14/Rev.1, at 5 (1972) [hereinafter Stockholm Declaration].[need source]

¹⁴⁸ "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 a part of the corpus of international law" Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, 1996 I.C.J. 226, 241-42 (July 8). See also, e.g., Alexandre Kiss, The International Protection of the Environment, in THE STRUCTURE AND PROCESS OF INTERNATIONAL LAW 1074-1075 (MacDonald et al. eds. 1983), cited in Prue Taylor, AN ECOLOGICAL APPROACH TO INTERNATIONAL LAW: RESPONDING TO CHALLENGES OF CLIMATE CHANGE 77 (1998).

¹⁴⁹ See Stockholm Declaration, supra note 147. The idea of permanent sovereignty over natural resources was endorsed by the General Assembly in 1962 and again, in very different terms in 1973. See Resolution on Permanent Sovereignty Over Natural Resources, G.A. Res. 3171, U.N. GAOR, 28th Sess., Supp. No. 30, at 52, U.N. Doc. A/9030 (1974), 13 I.L.M. 238; Resolution on Permanent Sovereignty Over Natural Resources, G.A. Res. 1803, U.N.GAOR, 17th Sess., Supp. No. 17, at 15, U.N. Doc. A/5217 (1963), 2 I.L.M. 223. All of the Warsaw Pact U.N. member states abstained from voting on the 1963 Resolution and the Stockholm Declaration. Stephen M. Schwebel, The Story of the U.N.'s Declaration on Permanent Sovereignty Over Natural Resources, 49 A.B.A.J. 463 (1963); BURNS H. WESTON, ET AL., BASIC DOCUMENTS IN INTERNATIONAL LAW AND WORLD ORDER 943 (1990). All of these states (as well as East Germany, which had become a U.N. member in the interim) voted in favor of the 1973 Resolution. The Stockholm Declaration was adopted by a vote of 103-0, with 12 abstentions; no roll call vote was recorded.

¹⁵⁰ Stockholm Declaration, *supra* note 147.

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be used to harm another state.

b. The Helsinki Rules

The Helsinki Rules promulgated by the International Law Association also assume limited territorial sovereignty. 151 Article IV of the Helsinki Rules states the "equitable use" concept: "[e]ach basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin." Among the factors to be used in determining what is reasonable and equitable, are the economic and social needs of each state, 153 the population in each basin state dependent on the waters of the basin, 154 and the degree to which waste and unnecessary injury can be avoided.¹⁵⁵

The first of these factors seems to weigh on the side of Romania; its need for development is great. The Aurul mine, for example, provided 3.000 desperately needed jobs in Baia Mare. 156 The others, though, favor the injured lower riparians: two million Hungarians drew drinking water from the Tisza, and the cost of protective measures - higher and betterconstructed tailings dams – would have been relatively slight.

The Helsinki Rules use a "substantial injury" standard to determine whether a state's use of water is reasonable and equitable. 157 Article X prohibits "any new form of water pollution or any increase in the degree of existing water pollution in an international drainage basin which would cause substantial injury in the territory of a co-basin State[.]"158 Article XI provides that a polluting state must cease the polluting activity and compensate the injured state. 159 The injury to the Tisza, and thus to Hungary and perhaps Yugoslavia, was certainly "substantial," and both countries have announced their intention to seek compensation.

The World Charter for Nature

The World Charter for Nature (in actuality, merely a General Assembly resolution) provides that "States... shall... [e]nsure that activities within

¹⁵¹ The Helsinki Rules, 52 I.L.A. 484 (1967).

¹⁵² Id. art. IV.

¹⁵³ See id. art. V(e).

¹⁵⁴ See id. art. V(f).

¹⁵⁵ See id. art. V(I) and V(k).

¹⁵⁶ Anca Paduraru, Baia Mare: Romania's Polluted City, AP, Mar. 11, 2000, available at 2000

¹⁵⁷ See The Helsinki Rules, supra note 1511, art. V(k).

¹⁵⁸ Id. art. X. The International Law Association also addressed transboundary pollution generally in The ILA Rules on International Law Applicable to Transfrontier Pollution, Sept. 4, 1982, 60 I.L.A. 157 (1983).

¹⁵⁹ See The Helsinki Rules, supra note 151, art. XI.

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their jurisdictions or control do not cause damage to the natural systems located within other States or in the areas beyond the limits of national jurisdiction[.]" This duty to other states, expressed in language similar to that of the earlier Stockholm Declaration and the later Rio Declaration, is then countered by a recognition of "the sovereignty of States over their natural resources[.]"¹⁶¹ The significant substitution of "natural systems" for "environment" seems to imply liability even in the absence of economically quantifiable harm. In the Baia Mara and Baia Borsa spills, of course, both quantifiable economic harm and intangible harm to "natural systems" are present.

The Rio Declaration

Principle 2 of the Rio Declaration¹⁶² is identical to The World Charter for Nature, with the exception of two added words to Principle 21 of the Stockholm Declaration:

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 and developmental 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. 163

Those two added words ("and developmental") shift the balance between territorial sovereignty and territorial integrity toward the former, favoring developing nations and upper riparians (in this case, Romania). The Rio Declaration does, however, require environmental impact assessment¹⁶⁴ and "prior and timely notification to . . . affected states[.]"¹⁶⁵

¹⁶⁰ World Charter for Nature, Oct. 28, 1982, G.A. Res. 37/7, Annex, art. 21(d), U.N. GAOR, 37th Sess., Supp. No. 51, at 17, U.N. Doc. A/37/51, 22 I.L.M. 455 (1983). The World Charter for Nature was adopted by a vote of 111 countries for to one (the United States) against, with 18 abstentions (mostly Latin American countries, plus Algeria and Lebanon). Later the U.N. Secretariat was informed that Mexico had intended to vote in favor of the resolution. See id. at 455.

¹⁶¹ Id. art. 22.

¹⁶² See Rio Declaration on Environment and Development, June 13, 1992, (vol. I) 31 I.L.M. 874, U.N. Doc. A/CONF.151/26 (1992), [hereinafter Rio Declaration].

¹⁶³ Id. Principle 2 (emphasis added). The added words reflect the major concern of the Rio Conference: balancing developing nations' needs against the environmental concerns of the developed countries. While the added words would seem to indicate that Romania can place a high priority on development if it wishes, Romania still has an obligation to ensure that the activity causes no harm to Hungary.

¹⁶⁴ See id. Principle 17.

¹⁶⁵ Id. Principle 19.

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e. The United Nations Convention on the Non-Navigational Uses of Transboundary Watercourses

Despite having been adopted by a General Assembly vote recorded as 103 for to 3 against, with 27 abstentions and 33 members absent, ¹⁶⁶ the Convention on the Law of Non-Navigational Uses of International Watercourses ¹⁶⁷ can not be said to reflect customary international law. ¹⁶⁸ Romania and the downstream states affected by the Baia Mare and Baia Borsa accidents, however, all voted in favor of the Convention, and may con-

¹⁶⁶ U.N. GAOR, 51st. Sess., 99th Plenary Mtg., July 8, 1997, U.N. Doc. A/RES/51/229, 36 I.L.M. 700 [hereinafter Non-Navigational Uses Convention]; General Assembly Adopts Convention on Law of Non-Navigational Uses of International Watercourses, May 21, 1997, U.N. Press GA/9248, Release 7-8. available at 1. http://www4.gve.ch/gci/GreenCrossPrograms/waterres/data/GenAsswater.html (visited Mar. 21, 2000) [hereinafter "GA/9248"]. Romania, Ukraine, Slovakia and Hungary all voted in favor of the Convention. Id. Although the Convention could also have been discussed alongside the Espoo Convention, it seems more appropriate to discuss it as a purely aspirational document. See Espoo Convention, supra note 1266. By its terms, the Convention will not enter into force until "the ninetieth day following the date of deposit of the thirty-fifth instrument of ratification, acceptance, approval or accession with the Secretary- General of the United Nations." The deadline for the deposit of such instruments is May 21, 2000; to date, only seven have been deposited (by Finland, Hungary, Jordan, Lebanon, Norway, South Africa, and Syria). Seven other countries (Cote D'Ivoire, Germany, Luxembourg, Netherlands, Paraguay, Portugal, and Venezuela) have signed but not ratified. See Convention on the Law of the Non-Navigational Uses of International http://www.un.org/Depts/Treaty/final/ts2/newfiles/part_boo/xxviiboo/xxvii_12.html (visited Mar

¹⁶⁷ For a description of the history of the ILC deliberations on the Draft Articles, see, inter alia, Peter Fischer & Gerhard Hafner, Aktuelle osterreichische Praxis zum Volkerrecht/Recent Austrian Practice in International Law, 36 OSTERR. Z. OFFENTL. RECHT UND VOLKERRECHT 365, 417-22 (1986); Stephen C. McCaffrey, An Update on the Contributions of the International Law Commission to International Environmental Law, 15 ENVTL. L 667, 670-78 (1985); Stephen C. McCaffrey, International Organizations and the Holistic Approach to Water Problems, 31 NAT. RESOURCES J. 139, 150-60 (1991); Stephen C. McCaffrey, The International Law Commission Adopts Draft Articles on International Watercourses, 89 Am. J. INT'L L. 395 (1995) (noting that final adoption of the Draft Articles was completed at the ILC's 1994 session); Stephen M. Schwebel, First Report on the Law of the Non-Navigational Uses of International *Watercourses* [1979], 2(1) Int'l Comm'n 143. Y.B. A/CN.4/SER.A/1979/Add.1; Stephen M. Schwebel, Second Report on the Law of the Nonnavigational Uses of International Watercourses [1980], 2(1) Y.B. Int'l Comm'n 159, 160-67, U.N. Doc. A/CN.4/SER.A/1980/Add.1; Ludwik A. Teclaff, Fiat or Custom: The Checkered Development of International Water Law, 31 NAT. RESOURCES J. 45, 71-73 (1991); The Law of the Non-Nacigational Uses of International Watercources, 3 COLO. J. NT'L ENVIL L. & POL'Y 1, 18-27, 32-36 (1992). To review a history of the International Law Commission's drafting of the Convention, see generally Draft Articles on the Law of the Non-navigational Uses of International Watercourses, July 19, 1991, Report of the International Law Commission on the Work of Its Forty-third Session, U.N. GAOR, 46th Sess., Supp. No. 10, at 161, U.N. Doc. A/46/10 (1991) [hereinafter ILC Draft Articles].

¹⁶⁸ See generally Aaron Schwabach, The United Nations Convention on the Law of Non-Navigational Uses of International Watercourses, Customary International Law, and the Interests of Developing Upper Riparians, 33 TEXAS INT'L L.J. 257 (1998).

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sider it an accurate statement of their rights and responsibilities under international law. Like the U.N. Convention on the Protection and Use of Transboundary Watercourses and Lakes, the Non-Navigational Uses Convention adopts an "equitable use" approach. Like the Danube Protection Convention, it requires that such use be (or attempt to be) sustainable. 170

Under the Non-Navigational Uses Convention, Romania would have had an obligation not to cause significant harm to its downstream neighbors.¹⁷¹ Once such harm occurred, Romania would then have been obligated to take "all appropriate measures . . . to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation."¹⁷²

Protection of water for drinking, fishing, and agriculture might take priority over mining uses: "In the event of a conflict between uses of an international watercourse, it shall be resolved . . . with special regard being given to the requirements of vital human needs." Part III of the Convention (Planned Measures) would have required Romania to notify, consult, and negotiate with the lower riparians when planning activities such as the Aurul tailings operation, that had the potential to adversely affect the lower riparians. Finally, the Convention provides detailed dispute settlement procedures. The convention provides detailed dispute settlement procedures.

IV. THE FUTURE OF EUROPE'S INTERNATIONAL WATERCOURSES

The treaty regime protecting the Danube basin has proved inadequate, just as the Rhine treaty regime proved inadequate in 1986. Under the current system, whenever northern Romania experiences heavy flooding, the Tisza will be endangered.

There are signs, however, that the situation along the Danube will improve. Just as the Sandoz spill focused attention on the Rhine, the Baia Mare spill has focused attention on the Danube and its tributaries. The Debrecen agreement is an encouraging sign. In addition, it should be noted that the legal structures protecting the Danube – especially the Danube Protection Convention and the International Commission for the Protection of the Danube – are very new. The Romanian spills have provided the current protective regime with its first real test, which it

¹⁶⁹ Non-Navigational Uses Convention, *supra* note 1666, art. 5(1).

¹⁷⁰ See id. art. 5. See also Danube Protection Convention, supra note 97.

¹⁷¹ See Non-Navigational Uses Convention, supra note 1666, art. 7.

¹⁷² *Id.* art. 7(2).

¹⁷³ *Id.* art. 10(2).

¹⁷⁴ See id. arts. 11-19.

¹⁷⁵ See id. art. 33.

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seems to have passed. All of the actors, including Romania, seem genuinely committed to addressing the situation.

However, two major problems remain. The first is the economic and political inequality that exists along the Danube; the second is that solving the problems of the Danube will not solve the problems of other rivers.

Inequality Along the Danube Α.

Economic and political inequality was not present along the Rhine in 1986. The riparian states of the Rhine are all wealthy, developed, democratic countries. Most are members of what is now the European Union. Those that were not members (Switzerland, Liechtenstein, and Austria) were thoroughly integrated into the Western capitalist economy and, while theoretically neutral, clearly aligned with the West during the Cold War era. All the riparian states of the Rhine had been at peace both internally and with each other for decades.

A similarly benign situation does not exist along the Danube. The riparian states include wealthy states such as Germany and Austria (also Rhine riparians), as well as impoverished, war-torn states such as Yugoslavia. While all of the riparian states are nominally democratic, the degree of individual liberty and participation in the political process varies greatly between them.

In such a situation, it is inevitable that some wealthy democratic states will attempt to export their environmental problems to poorer (and sometimes less democratic) ones. Austria, for example, helped finance the controversial Gabcikovo-Nagymaros project in exchange for a promised share of the electricity to be generated; Austrian environmentalists had prevented the building of a hydroelectric power plant in a nature reserve within Austria. 176 Similarly, European Union countries refuse to allow cyanide heap leaching in their own territory, yet permit the purchase of metals obtained by the same process in other countries. 177

Another Danubian problem not present along the Rhine in 1986 is the desperate poverty of some of the lower riparians. Romania (which is an upper riparian on the Tisza and a lower riparian on the Danube itself) has an annual per capita gross national product (GNP) of \$1,600. This falls somewhat lower than the GPA of El Salvador. ¹⁷⁸ In stark contrast, Hungary's annual per capita GNP, at \$4,340, is nearly three times as

¹⁷⁶ See Diverting the Danube, supra note 74, at 297.

¹⁷⁸ See THE WORLD BANK, 1998 WORLD DEVELOPMENT INDICATORS 12-13 (1998).

high; Germany's, at \$28,870, is more than eighteen times as high. 179 Bulgaria and Ukraine are even worse off than Romania. 180 While no reliable information is currently available for most of the states of the former Yugoslavia, it seems safe to conclude that economic conditions there are truly desperate.

Given such disparities, wealthier states (including non-riparians such as Australia) will continue to fund environmentally undesirable projects in the poorer riparian states. In Romania, for example, both the government and the people seem committed to environmental protection. At the same time, however, Romania cannot afford to turn away foreign investors offering jobs and development. The problem can only be addressed by adopting and enforcing stringent environmental safeguards.

The regulations must be adopted and enforced either by the investing country (in this case Australia), or by the country hosting the investment (in this case Romania). There are problems with both approaches. Australia, like most other developed countries, has been unwilling to apply its environmental standards to activities of its citizens abroad. 181 While a change would be welcome, such a strategy would only become effective when adopted by nearly all investing states.

At the same time, Romania may feel that it cannot afford to adopt environmental regulations as stringent as Australia's or the European Union's. A mining operation, for example, would be far cheaper in Romania, even applying Australian environmental standards, than in Australia. Other developing countries, though, might compete to make themselves more attractive to investors by offering lower environmental protection costs.

As with the problem of extraterritorial application of domestic environmental laws, this problem cannot be solved on a global scale until nearly all of the investment-receiving countries agree on some uniform standards. However, the problem can be solved on a local scale. The effective enforcement of some internationally determined minimum level of environmental standards in the Danube basin would prevent a "race to the bottom" in environmental standards among the developing riparians, while leaving developed riparians free to set higher standards.

Political and diplomatic obstacles to achieving such uniformity also exist. Along the Danube, the major obstacle of this nature is the continuing isolation of Yugoslavia. Yugoslavia remains the recipient,

¹⁷⁹ See id. As recently as 1992, an incredible 70.9% of Romanians lived on less than \$2 per day. See id. at 65.

¹⁸⁰ See id. at 12-14.

¹⁸¹ See supra notes 54-58, and accompanying text.

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rather than the source, of many of the Danube's problems. Within Yugoslavia, the river has suffered both from the Romanian spills and from the war with the North Atlantic Treaty Organization (NATO), two of whose members (Germany and Hungary) are Danube riparians. However, activities in Yugoslavia have enormous potential to cause harm to other riparians.

This is not to suggest a general rapprochement with Yugoslavia. ¹⁸³ However, those riparians situated downstream from Yugoslavia – especially the major riparians, Bulgaria and Romania – can only be harmed by excluding Yugoslavia from the Danube treaty regime. The ideal solution would be a rehabilitated Yugoslavia; however, in the interim provisional steps to ensure Yugoslavia's cooperation must be taken.

B. Saving Europe's Other Rivers

The other problem, emphasized by the fourteen years between Schweizerhalle and Baia Mare, is that international environmental law tends to grow in reaction to catastrophic incidents. Most environmental harm is caused by activities that are routine, quotidian, and dull; they do not capture the public imagination, and thus do not evoke the same level of regulatory response.

International environmental law is thereby distorted; after the horse has gone, rule-makers and the public install new locks on the stable door, pat themselves on the back, and go on to something new. Chronic polluting activity is often overlooked, as is the possibility of similar disasters elsewhere.

In the aftermath of Schweizerhalle, the Rhine riparians succeeded in saving the Rhine. In the aftermath of Baia Mare, the riparian states will probably succeed in saving the Tisza and the Danube. Europe, however, has many other vulnerable international river basins. The Dniester, the Dnieper, the Volga, the Don, and the Oder, among others, are all endangered.¹⁸⁴

It would be unfair to say that in the aftermath of the Rhine disaster

¹⁸² For a discussion of the environmental effects of the war with NATO, see generally Aaron Schwabach, *Environmental Damage Resulting from the NATO Military Action Against Yugoslavia*, 25 COLUM. J. ENVTL. L. 117 (2000).

¹⁸³ On the legality of the humanitarian intervention in Kosovo, see generally Aaron Schwabach, *Humanitarian Intervention and Environmental Protection: The Effect of the Kosovo War on the Law of War, X?* COLUM. J. E. EUR. L. X? (2000); Aaron Schwabach, *The Legality of the NATO Bombing Operation in the Federal Republic of Yugoslavia*, 11 PACE INT'L L. REV. 405 (1999); Aaron Schwabach, *Yugoslavia v. NATO, Security Council Resolution 1244, and the Law of Humanitarian Intervention*, 27 SYRACUSE J. INT'L. L. & COM. 77 (2000).

¹⁸⁴ See, e.g., JONI SEAGER, THE NEW STATE OF THE EARTH ATLAS 54-55 (2nd ed. 1995) (map).

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nothing was done to protect Europe's other rivers. The U.N./ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes was adopted six years after the accident. ¹⁸⁵ The U.N. Convention is a step in the right direction; more generalized global conventions, such as the Non-navigational Uses Convention, tend to be less useful, since the problems of river basins are by their nature local rather than global. The difference in the nature of watercourses, their ecologies, and the political and economic nature of the states lying within their basins makes universal rulemaking impossible. For instance, it would be hard to imagine that anything other than the most basic principles could be equally applicable to the Amazon, the Nile, the Columbia, the Rio Grande, and the Danube.

Within Europe, there is still enormous political, economic, and environmental diversity among river basins. The U.N. Convention is a good beginning; it also exhorts its parties to further their efforts. The Baia Mare and Baia Borsa spills highlight the need, at least within Europe, for continuing efforts to develop international legal structures to protect the waters of specific individual drainage basins.

¹⁸⁵ See U.N. Convention, supra note 96.

¹⁸⁶ *See id.* pmbl., art. 9.