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## What Lessons From Europe? A Comparative Analysis of the Legal Frameworks That Govern Europe's Transboundary Waters

by Patricia Wouters

*Editors' Summary: Rivers, lakes, and aquifers cross national borders around the world creating international interdependencies related to one of the world's most precious resources. More than one-half of the world's population derives their water from international sources, located beyond the jurisdiction and control of the country where they live. What are the rules of international law that govern these shared waters, and how can national water policy objectives be pursued in light of such interdependency, especially in a world of sovereign states? In this Article, Dr. Patricia Wouters identifies the legal regimes that apply to international watercourses and uses Europe as a regional case study to compare these different regimes. She uses a five-point analytical framework to identify, examine, and compare the rules of international law that govern these shared waters. The Article concludes by highlighting the legal innovations at the heart of the dual-track governance regime that has evolved to regulate Europe's transboundary waters and embeds this study in the global context.*

### I. Introduction

More than one-half of the world's population depends on water that crosses state borders, making national governments reliant upon their co-riparian neighbors. On a globe that seems to grow smaller every day, the interdependencies arising from the sharing of such a precious resource are easily identifiable, and yet not so readily understood nor managed. This Article examines the legal regimes that govern international watercourses, that is, those fresh waters that cross sovereign state borders (sometimes referred to as "transboundary waters"). Europe is selected as the regional case study for this work, which will identify and analyze the rules of international law that apply to shared European waters. As always, it is important to recognize the important roles that national law and domestic legal regimes play in the context of transboundary waters.<sup>1</sup>

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1. "Water law" is comprised of three distinct but interconnected areas of law: (1) international (state versus state); (2) national (domestic); and (3) transnational (third-party intervention at the national level). See Patricia Wouters & Alistair Rieu-Clarke, *The Role of Interna-*

This Article presents and employs a five-point analytical framework to examine and compare the key legal elements of transboundary watercourse regimes. In this context, the analysis focuses primarily on three legal agreements. At the global level, the most important instrument relevant to this work is the 1997 United Nations (U.N.) Convention on the Law of the Non-Navigational Uses of International Watercourses (Watercourses Convention).<sup>2</sup> At the European level, two regional instruments are studied, namely, the 1992 U.N. Economic Commission for Europe (UNECE)<sup>3</sup> Convention on the Protection and Use of Transboundary Watercourses

*tional Water Law in Ensuring "Good Water Governance": A Call for Renewed Focus and Action*, 15 WATER L. 89 (2004).

2. Convention on the Law of the Non-Navigational Uses of International Watercourses, G.A. Res. 51/206, 51 U.N. GAOR Supp. No. 49, at 341, U.N. Doc. A/51/49 (Vol. I) (1996), available at [http://www.thewaterpage.com/UN\\_Convention\\_97.html](http://www.thewaterpage.com/UN_Convention_97.html) (last visited Mar. 6, 2006) [hereinafter UNWC]. For details on the evolution and substantive content of the UNWC, see Patricia Wouters, *The Legal Response to Water Conflicts: The U.N. Watercourses Convention and Beyond*, 42 GERMAN Y.B. OF INT'L L. 293 (2000). See also STEPHEN C. MCCAFFREY, *THE LAW OF INTERNATIONAL WATERCOURSES: NON-NAVIGATIONAL USES* (Oxford Univ. Press 2001); ATTILA TANZI & MAURIZIO ARCARI, *THE UNITED NATIONS CONVENTION ON THE LAW OF INTERNATIONAL WATERCOURSE* (Kluwer Law Int'l 2001); and PATRICIA WOUTERS, *THE UNITED NATIONS WORK ON THE LAW RELATING TO THE NON-NAVIGATIONAL USES OF INTERNATIONAL WATERCOURSES: SURVEY OF THREE DECADES OF STUDY* (Kluwer Law Int'l forthcoming 2006).
3. Established by the U.N. Economic and Social Council as one of five regional U.N. bodies, UNECE was created in 1947. The UNECE has 55 Member States, extending from Europe to Central Asia, North America, and including Israel. See UNECE's homepage at <http://www.unece.org/Welcome.html> (last visited Feb. 25, 2006).

and International Lakes (Helsinki Convention)<sup>4</sup> and the 2000 European Union (EU) Water Framework Directive (WFD).<sup>5</sup> Together, these three agreements provide the legal foundation for Europe's transboundary waters and will form the basis for the analysis in this work.

## II. Global Context: Water Is Life

Water is life. This simple statement captures the essence of the evolving global water policy discourse linked with this precious resource. As the quality and quantity of freshwater around the world diminishes daily (exacerbated now by climate change), the mortality rate of children dying from water-related diseases continues to grow at an alarming rate.<sup>6</sup> In response to the many challenges linked with effective water resources management, the international community has galvanized the issues and promised to take "action" around the world, primarily at local and regional levels. In December 2003, the United Nations formally recognized the need for coordinated efforts and declared the period 2005 to 2015 as "the International Decade for Action" with, "Water for Life" as the driving policy objective.<sup>7</sup> States have supported this initiative, with their global endorsement of the Johannesburg Declaration on Sustainable Development<sup>8</sup> and their express commitment to achieving the so-called Millennium

Development Goals (MDGs).<sup>9</sup> Under the MDGs, states agree to "[r]educe by half the proportion of people without sustainable access to safe drinking waters."<sup>10</sup> This obligation features prominently in development aid policy, directing, in many respects, bilateral and multilateral donor's budgets and spending.<sup>11</sup> As a direct consequence, developing countries are being required to incorporate the MDGs as part of national economic policy, and to include these policy objectives in programs within their national "Poverty Reduction Strategies"<sup>12</sup> The recent U.N. World Summit, held in New York in September 2005,<sup>13</sup> considered the U.N. Sec-

4. Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Mar. 17, 1992, 31 I.L.M. 1312 (entered into force Oct. 6, 1996), available at <http://www.unep.org/env/water/pdf/watercon.pdf> (last visited Mar. 6, 2006) [hereinafter Helsinki Convention]. See UNECE, *Convention on the Protection and Use of Transboundary Watercourses and International Lakes*, at <http://www.unep.org/env/water/welcome.html> (last visited Feb. 25, 2006).

5. Directive 2000/60/EC of the European Parliament and the Council Establishing a Framework for Community Action in the Field of Water Policy (Oct. 23, 2000) (entered into force Dec. 22, 2000), 2000 O.J. (L 327) 1-73, available at [http://europa.eu.int/eur-lex/pri/en/oj/dat/2000/l\\_327/l\\_32720001222en00010072.pdf](http://europa.eu.int/eur-lex/pri/en/oj/dat/2000/l_327/l_32720001222en00010072.pdf) (last visited Mar. 6, 2006) [hereinafter WFD]. See Europa, *The EU Water Framework Directive*, at [http://europa.eu.int/comm/environment/water/water-framework/index\\_en.html](http://europa.eu.int/comm/environment/water/water-framework/index_en.html) (last visited Feb. 25, 2006).

6. U.N. International Children's Emergency Fund (UNICEF) statistics show that 1 child dies every 15 seconds from disease attributable to unsafe drinking water, deplorable sanitation, and poor hygiene. "As of 2002, one in six people worldwide—1.1 billion total—had no access to clean water. About 400 million of these are children. Four of ten people worldwide don't have access to even a simple latrine." UNICEF, *Millennium Development Goals, Ensure Environmental Sustainability*, at <http://www.unicef.org/mdg/environment.html> (last visited Feb. 25, 2006). The report continues: "Unclean water spreads diseases such as cholera and infant diarrhoea, which kill five million people per year, mainly children. More than half of Africans suffer from such water-related diseases." *Id.*

7. U.N. Res. A/RES/58/217, 78th plen. mtg. (Dec. 23, 2003). The International Decade for Action officially began on World Water Day, March 22, 2005. See U.N., *International Decade for Action*, at <http://www.un.org/waterforlifedecade/> (last visited Feb. 25, 2006).

8. Adopted at the 17th plenary meeting of the World Summit on Sustainable Development, on September 4, 2002, available at <http://www.johannesburgsummit.org> (last visited Feb. 25, 2006). The Johannesburg Summit, held on August 26 to September 4, 2002, in Johannesburg, South Africa, made mixed progress on the various "sustainable development" agendas. One notable success was in the area of water. In the Johannesburg "Plan of Implementation," governments agreed to "halve by 2015, the proportion of people without access to safe drinking water and basic sanitation," and also to "develop integrated water resources management and water efficiency plans by 2005." See U.N., *PLAN OF IMPLEMENTATION OF THE WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT (2002)*, available at <http://www.johannesburgsummit.org> (last visited Feb. 25, 2006).

9. The MDGs were originally conceived at the Millennium Summit in 2000. According to the U.N.'s website on MDGs:

The eight Millennium Development Goals (MDGs)—which range from halving extreme poverty to halting the spread of HIV/AIDS and providing universal primary education, all by the target date of 2015—form a blueprint agreed to by all the world's countries and all the world's leading development institutions. They have galvanized unprecedented efforts to meet the needs of the world's poorest.

U.N., *Millennium Development Goals*, at <http://www.un.org/millenniumgoals/> (last visited Mar. 6, 2006).

10. *Id.* at MDG Goal Number 7. Ensuring environmental stability, halving "the proportion of people without sustainable access to safe drinking water" and sanitation by 2015, and significantly improving the "lives of at least 100 million slum dwellers by 2020" are the goals set forth by MDG Goal Number 7. See *id.*

11. The president of the World Bank, Paul Wolfowitz, has remarked: "The Millennium Development Goals created a metric of accountability for which humanity will hold us answerable. It also placed in our hands a vital tool for measuring progress." See The World Bank, *World Bank President Urges Results on Reducing Poverty*, at <http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/ORGANIZATION/EXTOFFICEPRESIDENT/0,,contentMDK:20646699~menuPK:64260200~pagePK:51174171~piPK:64258873~theSitePK:1014541,00.html> (last visited Feb. 28, 2006).

12. The World Bank provides:

Poverty Reduction Strategy Papers (PRSP) describe a country's macroeconomic, structural and social policies and programs to promote growth and reduce poverty, as well as associated external financing needs. PRSPs are prepared by governments through a participatory process involving civil society and development partners, including the World Bank and the International Monetary Fund (IMF).

The World Bank, *Poverty Reduction Strategies*, at <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTTPRS/0,,menuPK:384207~pagePK:149018~piPK:149093~theSitePK:384201,00.html> (last visited Mar. 6, 2006). On the broader matter of state responsibility for development matters, which necessarily must include effective water resources management, the U.N. Secretary-General Kofi Annan is unequivocal in his March 2005 report:

Each developing country has primary responsibility for its own development—strengthening governance, combating corruption and putting in place the policies and investments to drive private-sector-led growth and maximize domestic resources available to fund national development strategies. Developed countries, on their side, undertake that developing countries which adopt transparent, credible and properly costed development strategies will receive the full support they need, in the form of increased development assistance, a more development-oriented trade system and wider and deeper debt relief. All of this has been promised but not delivered. That failure is measured in the rolls of the dead—and on it are written millions of new names each year.

U.N. GENERAL ASSEMBLY, *REPORT OF THE SECRETARY-GENERAL, IN LARGER FREEDOM: TOWARDS DEVELOPMENT, SECURITY, AND HUMAN RIGHTS FOR ALL 12*, U.N. Doc. A/59/2005 (Mar. 21, 2005), available at <http://www.un.org/largerfreedom/report-largerfreedom.pdf> (last visited Mar. 6, 2006) [hereinafter *IN LARGER FREEDOM*].

13. See U.N. General Assembly, *2005 World Summit*, at [http://www.un.org/ga/59/hl60\\_plenarymeeting.html](http://www.un.org/ga/59/hl60_plenarymeeting.html) (last visited Feb. 25, 2006).

retary General's report, *In Larger Freedom*, which called for enhanced global cooperation:

In a world of interconnected threats and challenges, it is in each country's self-interest that all of them are addressed effectively. Hence, the cause of larger freedom can only be advanced by broad, deep and sustained global cooperation among States. . . . [The world needs strong and capable States, effective partnerships with civil society and the private sector, and] agile and effective regional and global intergovernmental institutions to mobilize and coordinate collective action.<sup>14</sup>

This vision is particularly relevant to the management of the world's shared water resources, especially now where scarce water resources could be a catalyst for regional conflict and insecurity.<sup>15</sup> By the year 2020, the world population will reach 9 billion, with one-third of that number forecasted to be without access to adequate drinking water and sanitation. How will this challenge be met? Can lessons be learned from the European approach?

This Article examines how Europe manages its transboundary waters, focusing on the legal aspects, with a view to distilling what lessons may be learned in the context of the global issues related to water. As the world's third largest continent and with some 11% of the world population, Europe is covered with transboundary waters shared by more than 30 sovereign states, each with diverse political and cultural heritages. The EU, now with some 25 Member States and growing, has adopted a unique legal regime for managing freshwater, including rules covering shared international waters. However, for those European rivers that extend beyond the EU, different rules of international law apply. This legal diversity at the regional level provides a unique case study, which, upon closer scrutiny, reveals an emergent innovative "dual-track" governance regime (international/European and EU sub-regional), which continues to evolve in response to Europe's needs. Before analyzing this legal regime, the next section examines the geopolitical context of the regional case study.

### III. The Legal Regime Governing Europe's Transboundary Waters

#### A. What Is Europe?

What is Europe? From a water point of view, the map of Europe is quite complicated and interconnected, extending beyond the waters crossing the EU.<sup>16</sup> From a legal point of view, three levels of law—international, sub-regional, and national—together provide the legal foundation that regulates Europe's shared transboundary waters. This work will focus specifically on those rules at the international and sub-regional level that apply to water.

But first, let us examine more closely what we mean by "Europe." Definitions refer to Europe as one of the world's seven continents having "more [of] a cultural and political

distinction than a physiogeographic one."<sup>17</sup> In a geological and physical sense, Europe is described as "a subcontinent or large peninsula, forming the westernmost part of Eurasia. Europe is bounded to the north by the Arctic Ocean, to the west by the Atlantic, and in the south by the Mediterranean and the Caucasus."<sup>18</sup> The eastern border of Europe is generally accepted to be the Ural Mountains and in the Southeast, the Caspian Sea. Europe ranks at the second-smallest continent in terms of area (some 10,500,00 square kilometers, representing only 2% of the earth's surface), making it only larger than Australia.<sup>19</sup> Yet this area has diverse socio-cultural, economic, political, and geographical reaches, none of which are readily homogeneous. Notably, there is a sub-regional grouping of European countries that have formed stronger alliances under the EU, discussed in more detail below.

#### B. What Is the EU?

The EU, a regional arrangement constructed through a series of international agreements,<sup>20</sup> has grown from its origi-

17. WIKIPEDIA, *Europe*, at <http://en.wikipedia.org/wiki/Europe> (last visited Feb. 25, 2006).

18. *Id.*

19. Encarta offers the following definition of Europe:

Europe is actually just the western fifth of the Eurasian land mass, which is made up primarily of Asia. Modern geographers generally describe the Ural Mountains, the Ural River, part of the Caspian Sea, and the Caucasus Mountains as forming the main boundary between Europe and Asia. . . . The second smallest continent (Australia is the smallest), Europe has an area of about 10,525,000 sq km (4,065,000 sq mi), but it has the second-largest population of all the continents, about 718,500,000 (1991 estimate). The northernmost point of the European mainland is Cape Nordkinn, in Norway; the southernmost, Punta de Tarifa, in southern Spain near Gibraltar. From west to east the mainland ranges from Cape Roca (Cabo da Roca), in Portugal, to the north-east slopes of the Urals, in Russia.

Encarta, *Europe*, at [http://uk.encarta.msn.com/encyclopedia\\_761570768/Europe.html](http://uk.encarta.msn.com/encyclopedia_761570768/Europe.html) (last visited Mar. 6, 2006).

20. See Treaty of the European Union, 1992 O.J. (C 191), available at [http://europa.eu.int/eur-lex/en/treaties/dat/EU\\_treaty.html#0001000001](http://europa.eu.int/eur-lex/en/treaties/dat/EU_treaty.html#0001000001) (last visited Feb. 28, 2006).

The Treaty on European Union (EU Treaty) pursues two main objectives: the creation of a monetary union by laying down the principles and arrangements for the introduction of the euro and the creation of an economic and political union. This is the treaty that originated the concept of a three-pillar structure, the first pillar consisting of the European Community [(EC)] and the other two of the common foreign and security policy and police and judicial cooperation in criminal matters. There is, however, a big difference between the first pillar and the other two, which have not given rise to any transfers of sovereignty to the common institutions as was the case with the Treaty establishing the [EC]. In these fields the Member States wished to preserve their independent decision-making powers and restrict themselves to an intergovernmental form of cooperation. The most important legal instruments in these fields are the joint action, the common position, and the framework decision, which are almost always adopted unanimously and are binding only to a limited extent. The original EU Treaty (the Treaty of Maastricht) came into force on 1 November 1993 and has been amended successively by the Treaty of Amsterdam, which came into force in 1999, and the Treaty of Nice, which came into force on 1 February 2003. . . . It is also important to remember that the EU Treaty changed the designation of the European Economic Community (EEC) to [EC], while the other two Com-

14. IN LARGER FREEDOM, *supra* note 12, at 6.

15. See PATRICIA WOUTERS, WATER SECURITY: WHAT ROLE FOR INTERNATIONAL WATER LAW, IN HUMAN AND ENVIRONMENTAL SECURITY, AN AGENDA FOR CHANGE (Earthscan 2005).

16. For more information, see Transboundary Freshwater Dispute Database, *Basins at Risk*, at <http://www.transboundarywaters.orst.edu/projects/bar/> (last visited Feb. 25, 2006).



nal six Member States (Belgium, France, Germany, Italy, Luxembourg, and the Netherlands) to its current contingent of 25.<sup>21</sup> Under the EU Treaty, there has been a consolidation of policy, with the European Community (EC) at the core, replacing the former European Economic Community.<sup>22</sup> The EU continues to grow, with two additional members—Bulgaria and Romania—expected to join in 2007, and negotiations with Croatia and Turkey commenced in October 2005. In December 2005, the European Council,<sup>23</sup> comprised of representatives from Member governments and responsible for adopting Community legislation, decided to grant candidate country status to the former Yugoslav Republic of Macedonia, although accession negotiations have yet to begin. The EU recently decided to parallel its “enlargement” process, which permits new Member States to join the EU, with a “neighbourhood” procedure, which is aimed at extending EU policies to non-member states. The legal foundation for these new arrangements, the so-called Partnership Agreements, set forth the scope of cooperation with the new “neighbors.”<sup>24</sup> Current “partners”

munities, the [European Coal and Steel Community] . . . and Euratom . . . were merged with that Community.

Europa, *Process and Players*, at [http://europa.eu.int/eur-lex/lex/en/droit\\_communaire/droit\\_communaire.htm#1.1.4](http://europa.eu.int/eur-lex/lex/en/droit_communaire/droit_communaire.htm#1.1.4) (last visited Mar. 6, 2006). Under EU agreements, Member States surrender some elements of sovereignty, agreeing to be bound by the laws of the EU. In many instances, however, EU directives leave the specifics of implementation of EU policies and law to the Member States, thereby recognizing the importance of national government policy and administration.

21. The 25 Member States (as of January 2006) are: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, the Netherlands, and the United Kingdom. See Europa, *European Union Member States*, at [http://europa.eu.int/abc/governments/index\\_en.htm#members](http://europa.eu.int/abc/governments/index_en.htm#members) (last visited Feb. 25, 2006).

22. The EU website provides a summary of key points:

The main purpose of the Treaty establishing the European Community (EC Treaty) was to bring about the gradual integration of the States of Europe and to establish a common market founded on the four freedoms of movement (for goods, services, people and capital) and on the gradual approximation of economic policies. To this end the Member States surrendered part of their sovereignty and gave the Community institutions the power to adopt legislation that would be directly applicable in the Member States (regulation, directive, decision) and take precedence over national law.

The present EC Treaty results from the amendments made to the Treaty establishing the European Economic Community (EEC Treaty), which was signed in Rome in 1957 and came into force on 1 January 1958. That treaty has been amended several times, in particular by the Single European Act, which came into force in 1987, the Treaty of Maastricht (Treaty on European Union), which came into force in 1993, the Treaty of Amsterdam, which came into force in 1999, and the Treaty of Nice, which came into force on 1 February 2003. As a result of these amendments, the sectors falling under the EC Treaty have been extended so that they now include nearly all aspects of the economy and certain more specifically political matters, such as the right of asylum and immigration (see the Treaty of Amsterdam).

Europa, *Process and Players*, *supra* note 20.

23. For more information on the role of the European Council, visit the Council of the EU's website at [http://ue.eu.int/cms3\\_fo/showPage.asp?lang=en&id=1&mode=g&name=](http://ue.eu.int/cms3_fo/showPage.asp?lang=en&id=1&mode=g&name=) (last visited Feb. 28, 2006).

24. The European Neighbourhood Policy (ENP) website states:

The European Neighbourhood Policy is a new policy that invites our neighbours to the East and to the South to share in

with the EU include Israel, Jordan, Moldova, Morocco, the Palestinian Authority, Tunisia, and the Ukraine—each of whom have significant transboundary water issues. This growing club of EU partners is an interesting development that should be watched more closely, as it may have positive spill-over effects in the area of water resources management. The scope for partnership clearly extends beyond the other European states—some 15 countries ranging from Albania to Switzerland—and could have an influence on transboundary water resources management well beyond the EU.<sup>25</sup>

Given the push for EU expansion, including the European Neighbourhood Policy, it is important to understand how membership to the EU is formally constructed. In order to join the EU, states must fulfill the economic and political conditions set forth in the “Copenhagen criteria,”<sup>26</sup> according to which a prospective Member must:

- be a stable democracy, respecting human rights, the rule of law, and the protection of minorities;
- have a functioning market economy; and
- adopt the common rules, standards, and policies that make up the body of EU law.<sup>27</sup>

As part of its commitment to Member States, the EU will assist them to implement EU laws and will provide them with a range of financial assistance to improve their infrastructure and economy.<sup>28</sup>

Of particular relevance to this study is the system of governance adopted under the EU whereby instruments referred to as “Directives” are used to implement common

the peace, stability and prosperity that we enjoy in the European Union and which aims to create a ring of friends around the borders of the new enlarged EU.

Europa, *European Neighbourhood Policy*, at [http://europa.eu.int/comm/world/enp/index\\_en.htm](http://europa.eu.int/comm/world/enp/index_en.htm) (last visited Feb. 25, 2006). A recent press release notes: “Seven ENP Action Plans have been negotiated and formally adopted—with Israel, Jordan, Moldova, Morocco, the Palestinian Authority, Tunisia and Ukraine.” Press Release, European Neighbourhood Policy: A Year of Progress (Nov. 24, 2005), available at <http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/05/1467&format=HTML&aged=0&language=EN&guiLanguage=en> (last visited Feb. 25, 2006). And the future shows more partners—the next five ENP Action Plans with Armenia, Azerbaijan, Egypt, Georgia, and Lebanon is progressing, with preparations for an ENP Country Report on Algeria. See *id.*

25. These include: Albania, Andorra, Belarus, Bosnia-Herzegovina, Iceland, Liechtenstein, Moldova, Monaco, Norway, Russia, San Marino, Serbia and Montenegro, Switzerland, Ukraine, and Vatican City. See Europa, *Other European Countries*, at [http://europa.eu.int/abc/governments/index\\_en.htm#members](http://europa.eu.int/abc/governments/index_en.htm#members) (last visited Feb. 25, 2006).

26. See WIKIPEDIA, *Copenhagen Criteria*, at [http://en.wikipedia.org/wiki/Copenhagen\\_criteria](http://en.wikipedia.org/wiki/Copenhagen_criteria) (last visited Feb. 25, 2006). The criteria were laid down at the June 1993 European Council in Copenhagen, Denmark, from which they take their name. See *id.*

27. See *id.*

28. Europa, *Enlargement*, at <http://europa.eu.int/comm/enlargement/enlargement.htm> (last visited Feb. 25, 2006). Article 49 of the Treaty on European Union provides “any European State which respects the principles set out in Article 6(1) may apply to become a member of the Union.” Treaty on European Union, art. 49, 2002 O.J. (C 325). Article 6(1) states that “the Union is founded on the principles of liberty, democracy, respect for human rights and fundamental freedoms, and the rule of law, principles which are common to the Member States.” *Id.* art. 6(1). The EU has not defined its limits in geographical terms, but each applicant country has to meet the basic conditions of the Copenhagen criteria. Thirteen countries are involved in the enlargement process at this stage, and in the coming years other countries are expected to submit applications for membership.

policies across Member States.<sup>29</sup> Directives have “direct” effect; that is, each Member State is bound to follow the rules laid down but has the “choice of form and methods” to accomplish them.<sup>30</sup> Under EU legislation, then, a directive is binding on national governments on the result to be achieved, with the means for arriving at that end being left to individual governments to determine. The European Court of Justice, located in Luxembourg, is responsible for deciding matters related to EU law, including infringements or possible violations or failures to implement EU Directives.<sup>31</sup>

### C. *What International Waters in Europe?*

Close to 200 international rivers and aquifers are shared by two or more states throughout Europe (see Appendix 1). These range from the “most international” river basin, the Danube River Basin, which covers the territories of 18 states,<sup>32</sup> to some 40 watercourses shared only by two countries. Europe’s longest river, the Volga, mostly in Russia, flows primarily in a southerly direction and empties into the Caspian Sea. Other major European transboundary river basins include the Po and Rhone, which flow into the Mediterranean Sea; the Elbe, Loire, Rhine, and Seine, which enter the Atlantic Ocean or the North Sea; and the Oder and Wisła, which flow north to the Baltic Sea. Europe’s biggest freshwater lake is Lake Ladoga in northwest Russia.<sup>33</sup> Many European states are heavily reliant on waters coming from outside of national borders, including Belgium, Hungary and the Netherlands, with each up to 80% reliant on external water resources. For some 16 European countries, close to 90% of their territory is located within international basins.<sup>34</sup> And with the changed political situation in the former Soviet Union, a number of rivers in that region have become newly internationalized, raising a host of complex issues.<sup>35</sup>

29. Directives are adopted by the Council in conjunction with the European parliament or by the Commission alone, with the primary purpose to align national legislation. Importantly, “a directive is binding on the Member States as to the result to be achieved but leaves them the choice of the form and method they adopt to realise the Community objectives within the framework of their internal legal order.” Europa, *Process and Players*, *supra* note 20. Failure to transpose a directive into national legislation, including undue delay, can result in a citizen, nonetheless, invoking the directive in national courts. For more, see *id.*

30. For example, of particular relevance to this Article, Article 24 of the WFD, entitled “Implementation,” provides: “Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive at the latest 22 December 2003. They shall forthwith inform the Commission thereof.” WFD, *supra* note 5, art. 24.

31. The Court of Justice comprises 25 judges and 8 advocates-general. For more information see, CVRIA, *The Court of Justice of the European Communities*, at [http://curia.eu.int/en/instit/presentationfr/index\\_cje.htm](http://curia.eu.int/en/instit/presentationfr/index_cje.htm) (last visited Feb. 28, 2006).

32. A report of the Danube River Basin District states: “The Danube River Basin is the second largest river basin of Europe covering territories of 18 states including EU-Member States, Accession Countries and other states. In addition to the Danube River Basin the Danube River Basin District (DRBD) includes some of the Black Sea coastal catchments.” DRBD, DANUBE BASIN ANALYSIS (WFD ROOF REPORT 2004) 19 (2005), available at [http://www.icpdr.org/pls/danubis/danubis\\_db\\_dyn\\_navigator.show](http://www.icpdr.org/pls/danubis/danubis_db_dyn_navigator.show) (last visited Feb. 26, 2006).

33. Encarta, *Europe*, at [http://uk.encarta.msn.com/encyclopedia\\_761570768/Europe.html](http://uk.encarta.msn.com/encyclopedia_761570768/Europe.html) (last visited Feb. 25, 2006).

34. ALISTAIR RIEU-CLARKE, *HYDROPOLITICAL VULNERABILITY AND RESILIENCE STUDY: EUROPE 2* (U.N. Environment Program Division for Early Warning and Assessment, forthcoming 2006).

35. See Sergei Vinogradov, *Transboundary Water Resources in the Former Soviet Union: Between Conflict and Co-operation*, 36 NAT.

Most of the freshwater used in Europe is surface water, with additional sources coming from groundwater and some desalination.<sup>36</sup> The range of uses includes industrial, agricultural, and domestic, each suffering from the growing problems of scarcity and water quality. Pollution and extreme hydrological events have been at the forefront of European water problems over the past decade. There are also emerging problems of water scarcity that may lead to regional conflict, as a recent UNECE report asserts:

At present 31% of Europe’s population lives in countries already suffering from what we call high water stress, particularly during droughts and periods of low river flow. The trouble is that demand for clean water will probably increase throughout Europe and Central Asia. Areas such as the Mediterranean and Central Asian countries, which are already facing overexploitation of their water resources, may well find this growing demand generating conflicts between the different water users and between countries, too.<sup>37</sup>

The next section sets forth the legal analytical framework that will be used to identify and compare the body of rules that govern Europe’s transboundary waters.

## IV. Global Overview: The Legal Regime Governing European Rivers

In order to understand and rigorously compare the legal regimes that apply to Europe’s international watercourses, this Article employs a five-point analytical framework.<sup>38</sup> In order to set the context for that task, however, the next section presents a brief overview of the three documents that comprise the legal foundation for this work.

### A. *The U.N. Watercourses Convention (UNWC)*

The rules of international law that govern the uses of transboundary waters have evolved over the past century

RESOURCES J. 393 (1996). See also PATRICIA WOUTERS ET AL., INTEGRATED WATER RESOURCES MANAGEMENT IN TRANSBOUNDARY BASINS: AN INTERSTATE AND INTERSECTORAL APPROACH—THE CASE OF THE ARAL SEA (Kluwer Law Publishers, forthcoming 2006).

36. RIEU-CLARKE, *supra* note 34, at 3.

37. UNECE, THE 1992 UNECE CONVENTION ON THE PROTECTION AND USE OF TRANSBOUNDARY WATERCOURSES AND INTERNATIONAL LAKES 3 (2004), available at [http://www.unece.org/env/water/documents/brochure\\_water\\_convention.pdf](http://www.unece.org/env/water/documents/brochure_water_convention.pdf) (last visited Mar. 6, 2006). The UNECE Report explains:

At the same time some UNECE countries are suffering from more floods than ever before, and these have a severe economic and social impact. Floods have become the most common and costly “water quantity problem” not only in parts of Western and Central Europe and North America but also in the Mediterranean region. Many countries depend on groundwater to meet the demand for drinking water, and are quickly depleting precious aquifers, especially around cities. Today, the water supply of some 140 million European city dwellers comes from overexploited groundwater resources. The needs of irrigation agriculture, too, make excessive demands on the freshwater available. These processes are inflicting irreversible damage on our environment, as they are lowering groundwater tables and threatening natural wetlands as well as causing salt-water intrusion into coastal aquifers.

*Id.*

38. See PATRICIA WOUTERS ET AL., TRANSFORMING POTENTIAL CONFLICT INTO COOPERATION POTENTIAL: THE ROLE OF INTERNATIONAL WATER LAW (UNESCO PCCP 2003).

into an identifiable body of customary and treaty laws, captured primarily within the text of the UNWC,<sup>39</sup> adopted on May 20, 1997,<sup>40</sup> supported by some 104 states.<sup>41</sup> The U.N. Resolution containing the Convention contained 14 European states as part of the sponsoring delegation.<sup>42</sup> All European states voted in support of the U.N. Convention, apart from France and Spain, who abstained from voting. Turkey, in keeping with tradition, voted against the Resolution and has consistently refused to adopt the UNWC, preferring instead to negotiate bilateral agreements. This reluctance to recognize the rules of law codified in the UNWC may suggest a similar reticence in the European context, where Turkey is keen to become an EU Member State.

The U.N. Convention, currently with 14 state parties, remains open for accession globally and requires an additional 21 parties before it will enter into force.<sup>43</sup> The current initiative to promote the ratification of the UNWC is to be commended, since this could assist with transboundary watercourses management in several ways: (1) it would provide support to those regions that have little or no treaties on their international rivers and lakes (such as Meso-America); (2) it would support the “weakest” watercourse state on shared watercourses; and (3) it would consolidate and present an identifiable framework for addressing allocation and

re-allocation issues, central to transboundary water resources management.<sup>44</sup>

The Convention covers all five areas highlighted by the legal analytical framework discussed below. It is important to stress at this point, however, that the UNWC is founded upon the principle of “equitable and reasonable utilisation,” which requires that “all relevant factors,” including environmental and trade issues (virtual water), be taken into account when determining allocation and reallocation issues in the transboundary context.<sup>45</sup> The great strength of this approach is that it levels the playing field for all users and all uses, and permits an ongoing assessment for the management of water resources. This principle is fundamental in the European context.

### *B. The Helsinki Convention and the EU WFD*

A quick overview of the historical evolution of how European rivers were managed reveals a series of multilateral treaties dating back to the early 19th century, which focused primarily on navigational issues, probably due to the emerging commerce moving along European rivers. Post world-war peace treaties introduced legal regimes for “peace and commerce,” thereby establishing the legal basis for cooperation, the demarcation of borders, and the establishment of a number of regional river basin commissions. Under the UNECE 1992 Helsinki Convention, an umbrella pan-European treaty with some 35 parties,<sup>46</sup> the focus was clearly on “the protection and use” of shared rivers and lakes, highlighting the importance of limiting adverse transboundary impact that resulted from development.<sup>47</sup> Along the same lines, with an emphasis on the sustainable management and protection of freshwaters generally, the EU adopted and now works to implement the WFD.<sup>48</sup> This EU legislation updates, consolidates, and supersedes a large number of water-related EU Directives.<sup>49</sup> Although the Helsinki Convention and the EU WFD each cover some of Europe’s shared freshwaters, the approach and the legal rules adopted in the two instruments are quite distinctive. There is a current move to build upon the separate but complementary regimes established under the UNECE Helsinki Convention and the EU WFD (in particular on transboundary waters), with a recent meeting on this topic hosted by Poland.<sup>50</sup>

39. UNWC, *supra* note 2.

40. The draft resolution of the draft Convention was sponsored by Antigua and Barbuda, Bangladesh, Bhutan, Brazil, Cambodia, Cameroon, Canada, Chile, Denmark, Finland, Germany, Greece, Grenada, Honduras, Hungary, Italy, Japan, Jordan, Laos, Latvia, Liechtenstein, Malaysia, Mexico, Nepal, Netherlands, Norway, Portugal, Republic of Korea, Romania, Sudan, Sweden, Syria, Tunisia, the United Kingdom, the United States, Uruguay, Venezuela, and Vietnam. See Press Release, U.N., General Assembly Adopts Convention on the Law of Non-Navigational Uses of International Watercourses (May 21, 1977) (on file with author).

41. The states voting in support of the UNWC were Albania, Algeria, Angola, Antigua and Barbuda, Armenia, Australia, Austria, Bahrain, Bangladesh, Belarus, Belgium, Botswana, Brazil, Brunei Darussalam, Burkina Faso, Cambodia, Cameroon, Canada, Chile, Costa Rica, Côte d’Ivoire, Croatia, Cyprus, Czech Republic, Denmark, Djibouti, Estonia, Federated States of Micronesia, Finland, Gabon, Georgia, Germany, Greece, Guyana, Haiti, Honduras, Hungary, Iceland, Indonesia, Iran, Ireland, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Laos, Latvia, Liechtenstein, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Maldives, Malta, Marshall Islands, Mauritius, Mexico, Morocco, Mozambique, Namibia, Nepal, the Netherlands, New Zealand, Norway, Oman, Papua New Guinea, Philippines, Poland, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Samoa, San Marino, Saudi Arabia, Sierra Leone, Singapore, Slovakia, Slovenia, South Africa, Sudan, Suriname, Sweden, Syria, Thailand, Trinidad & Tobago, Tunisia, Ukraine, United Arab Emirates, the United Kingdom, the United States, Uruguay, Venezuela, Vietnam, Yemen, and Zambia. States voting against the Convention were Burundi, China, and Turkey. And the states that abstained from voting were Andorra, Argentina, Azerbaijan, Bolivia, Bulgaria, Colombia, Cuba, Ecuador, Egypt, Ethiopia, France, Ghana, Guatemala, India, Israel, Mali, Mongolia, Pakistan, Panama, Paraguay, Peru, Rwanda, Spain, Tanzania, and Uzbekistan. Thirty-three states were absent from voting, including Afghanistan, Bahamas, Barbados, Belize, Benin, Bhutan, Cape Verde, Comoros, Democratic People’s Republic of Korea, Dominican Republic, El Salvador, Eritrea, Fiji, Guinea, Lebanon, Mauritania, Myanmar, Niger, Nigeria, Palau, Saint Kitts & Nevis, Saint Lucia, Saint Vincent and the Grenadines, Senegal, Solomon Islands, Sri Lanka, Swaziland, Tajikistan, the former Yugoslav Republic of Macedonia, Turkmenistan, Uganda, Zaire, and Zimbabwe. For a more detailed discussion, see Wouters, *supra* note 2.

42. These states include Denmark, Finland, Germany, Greece, Hungary, Italy, Latvia, Liechtenstein, the Netherlands, Norway, Portugal, Romania, Sweden, and the United Kingdom. See Press Release, *supra* note 40.

43. UNWC, *supra* note 2, art. 36. See Wouters, *supra* note 2.

44. See Wouters, *supra* note 2.

45. See PATRICIA WOUTERS ET AL., SHARING TRANSBOUNDARY WATERS—AN INTEGRATED ASSESSMENT OF EQUITABLE ENTITLEMENT: THE LEGAL ASSESSMENT MODEL (International Hydrological Programme, Session VI, Technical Documents in Hydrology No. 74) (UNESCO 2005).

46. The State parties are: Albania, Austria, Azerbaijan, Belarus, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Kazakhstan, Latvia, Liechtenstein, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine and the EC.

47. See Helsinki Convention, *supra* note 4.

48. See WFD, *supra* note 5.

49. *Id.* pmb1.

50. The first meeting, held in Sterdyn, Poland, on October 18 to 19, 2005, aimed to:

(a) Test and possibly adapt the guidance documents developed in the framework of the EU Common Implementation Strategy in countries in transition; (b) Transfer early experience on ways of better integrating water management issues



Analyzing the legal regime that has evolved in Europe reveals a growing convergence of European practice in this field, largely as a result of the ongoing implementation of these two regional documents. The next section examines the legal regimes that apply to Europe's shared waters.

## V. Legal Analysis

The analytical framework used here permits a comparative examination of state and treaty practice under five broad headings, which together identify the cornerstone legal issues to be addressed when assessing transboundary watercourse regimes. These headings are: (1) scope; (2) substantive rules; (3) procedural rules; (4) institutional mechanisms; and (5) dispute prevention/compliance.<sup>51</sup> This framework will be employed next in the context of the emerging legal regimes that govern European rivers. The focus will be on the Helsinki Convention and the EU WFD, including, as a point of reference and context, consideration of the UNWC, and, where relevant, state practice beyond Europe.

### A. Scope

The legal question to be answered in this section is: "what waters are covered?" The response to this query determines the legal reach of the agreement by defining the waters, uses, and parties that are subject to the rules that apply. The legal issue of "scope" is generally dealt with at the outset of the international agreement, and usually includes geographical and/or hydrological or hydrographical parameters. "Scope" might also be identified and prescribed through a listing of the types of uses or activities, i.e., protecting ecosystems, regulated by the agreement. In any event, the matter of "scope" is an important one and has proven to be one of the most difficult issues to address, as it requires interdisciplinary expertise and scientific inputs.<sup>52</sup>

into other sectoral policies from EU member States to countries in transition; and (c) Disseminate the results of the EU pilot projects on transboundary water basins under the Common Implementation Strategy.

UNECE, WORKSHOP NOTICE: WORKSHOP ON TRANSBOUNDARY WATER MANAGEMENT AT THE NORTHEASTERN BORDER OF THE EUROPEAN UNION 2, U.N. Doc. MP.WAT/SEM.6/2005/1 (2005), available at <http://unece.org/env/documents/2005/wat/sem.6/mp.wat.sem.6.2005.1e.pdf> (last visited Mar. 6, 2006). A similar workshop was held in Belgrade on November 17-18, 2005, focusing on South-Eastern Europe. The workshop was the first step in a two-part programme:

The first workshop will therefore provide a general overview of the management of transboundary waters in Eastern Europe and of practices in EU and non-EU countries. In particular, experience gained in the implementation of the WFD, by international river commissions and within international projects on transboundary waters will be shared. Information on relevant funding instruments for transboundary water cooperation projects will also be presented. Finally, the workshop will propose activities to improve cooperation on transboundary waters in the region and make recommendations for the workshop follow-up.

*Id.*

51. This section is taken from research developed by the University of Dundee, International Water Law Research Institute, now published in several sources. See, e.g., WOUTERS ET AL., *supra* note 45.
52. See HYDROLOGY AND WATER LAW—BRIDGING THE GAP: CASE STUDIES FROM AROUND THE WORLD (working title) (Patricia Wouters & J. Wallace eds., IWA Publishing, forthcoming 2006) [hereinafter HYDROLOGY AND WATER LAW].

The type of watercourse agreement—i.e., framework as compared to basin-specific—may dictate how detailed its "scope" will be defined. This is particularly relevant in Europe, where framework agreements provide the baseline with broad objective-based definitions of "scope," which are later defined more precisely in the context of basin-specific agreements, concluded under the framework agreement.

The 1997 UNWC is a framework instrument. It defines "scope" using the terms "international watercourse" and "Watercourse State."<sup>53</sup> The Convention, by definition, covers surface waters and connected aquifers, but does not deal with confined aquifers (discussed below). The scope as defined in the UNWC adopts a basinwide approach, although this is not as clearly spelled out as under the International Law Association's Helsinki Rules on the Uses of the Waters of International Rivers, which uses the term "international drainage basin" as the prescriptive term defining "scope" matters.<sup>54</sup> The UNWC is open to all watercourse states and "regional economic integration organizations" as a global instrument. It entitles each watercourse state to be involved in negotiating agreements affecting the entire watercourse; partial watercourse agreements must include those states whose interest might be significantly affected.<sup>55</sup>

As noted above, the "scope" of the UNWC does not extend to cover "confined aquifers" (confined groundwater). Despite the recommendation by the U.N. International Law Commission (ILC) that their draft rules should cover shared groundwaters, this was rejected by the U.N. Working Group of the Whole,<sup>56</sup> resulting in the matter of "scope" remaining prescribed as defined in the UNWC. This result created a vacuum in this area of the law, although this is now being addressed.<sup>57</sup> Given the fact that more than 90% of the world's

53. The UNWC defines "watercourse" as "a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus," and "international watercourse" as "a watercourse, parts of which are situated in different States." It defines "watercourse state" as a "State Party to the present Convention in whose territory part of an international watercourse is situated, or a Party that is a regional economic integration organization, in the territory of one or more of whose Member States part of an international watercourse is situated." See UNWC, *supra* note 2, art. 4.

54. The "Helsinki Rules" were adopted by the International Law Association at the 52d conference, held at Helsinki in August 1966. The Report of the Committee on the Uses of the Waters of International Rivers (1967), which sets forth the rules, is available at [http://www.internationalwaterlaw.org/IntlDocs/Helsinki\\_Rules.htm](http://www.internationalwaterlaw.org/IntlDocs/Helsinki_Rules.htm) (last visited Feb. 27, 2006). See PATRICIA WOUTERS, RIVERS OF THE WORLD: WATER LAW, STATE PRACTICE, AND CURRENT ISSUES (IWA Publ'g forthcoming 2006).

55. Article 4 of the UNWC provides: "Every watercourse State is entitled to participate in the negotiation of and to become a party to any watercourse agreement that applies to the entire international watercourse, as well as to participate in any relevant consultations." Article 4(2) provides:

A watercourse State whose use of an international watercourse may be affected to a significant extent by the implementation of a proposed watercourse agreement that applies only to a part of the watercourse or to a particular project, programme or use is entitled to participate in consultations on such an agreement and, where appropriate, in the negotiation thereof in good faith with a view to becoming a party thereto, to the extent that its use is thereby affected.

56. The "Working Group of the Whole" is the U.N. Sixth Committee (Legal Committee) convened in a working group for the purposes of considering the ILC Draft Rules.

57. For more details, see Wouters, *supra* note 2, and WOUTERS, *supra* note 54.



freshwater is contained in aquifers, many of which cross national borders,<sup>58</sup> this issue requires more consideration. The matter is currently under study by the ILC, which prepares a document on the rules of law that might cover shared groundwater.<sup>59</sup> Such an endeavor raises many issues, especially in light of the ILC's experience in negotiating the 1997 UNWC—which took close to 30 years of study and ended with disagreement on core issues, including the matter of “scope.”<sup>60</sup>

In the European context, the matter of “scope” receives two separate types of treatment under firstly, the UNECE Helsinki Convention, and secondly, the EU WFD. The Helsinki Convention seeks to address the water-related problems particular to that era (the 1990s), when environmental concerns led to efforts aimed at reducing pollution and limiting adverse transboundary impact.<sup>61</sup> The key provision of the Helsinki Convention, Article 2, provides the platform for the definition of “scope,” focusing on the matter of “transboundary impacts.” The agreement covers “transboundary waters”<sup>62</sup> and provides for two categories of state

party: “Party”<sup>63</sup> and “Riparian Party.”<sup>64</sup> Being a framework instrument, the geographical scope is not defined beyond the requirement that the agreement relates to “transboundary” impacts. The Helsinki Convention has 35 state parties, including the EC, and has recently adopted an amendment opening membership globally.<sup>65</sup>

A number of water-related agreements have been concluded under the Helsinki Convention, thus extending its impact, including two important multilateral instruments, the London Protocol on Water and Health,<sup>66</sup> and the Kiev

tions of transboundary waters caused by a human activity, the physical origin of which is situated wholly or in part within an area under the jurisdiction of a Party, within an area under the jurisdiction of another Party. Such effects on the environment include effects on human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; they also include effects on the cultural heritage or socio-economic conditions resulting from alterations to those factors.

*Id.* art. 1(2).

58. See U.N. Educational, Scientific, and Cultural Organization, *International Shared Aquifer Resource Management (ISARM)*, at <http://www.iah.org/isarm/> (last visited Feb. 27, 2006). See also Shammy Puri & Alice Aureli, *Transboundary Aquifers: A Global Program to Assess, Evaluate, and Develop Policy*, 43 GROUND WATER 661 (2005), available at [http://www.iah.org/isarm/gwat\\_100.pdf](http://www.iah.org/isarm/gwat_100.pdf) (last visited Feb. 27, 2006).
59. See ILC, REPORT ON THE WORK OF ITS FIFTY-SEVENTH SESSION, U.N. GAOR, 60th Sess., Supp. No. 10, U.N. Doc. A/60/10 (2005), available at <http://untreaty.un.org/ilc/sessions/57/57sess.htm>. At the 57th session, the ILC considered the third report of the Special Rapporteur, Mr. Chusei Yamada, which contained a complete set of 25 draft articles on the law of transboundary aquifers. See ILC, THIRD REPORT ON THE SHARED NATURAL RESOURCES: TRANSBOUNDARY GROUNDWATERS, U.N. Doc. A/CN.4/551 and Corr. 1 and Add. 1 (2005), available at [http://untreaty.un.org/ilc/guide/8\\_5.htm](http://untreaty.un.org/ilc/guide/8_5.htm) (last visited Feb. 27, 2006). At its 2836th meeting, held on May 11, 2005, the ILC decided to establish a Working Group to be chaired by Enrique Candioti to review the draft articles presented by the Special Rapporteur taking into account the debate in the ILC on the topic. The Working Group had the benefit of advice and briefings from experts on groundwaters from UNESCO and the International Association of Hydrogeologists (IAH). The Working Group reviewed and revised eight draft articles and recommended that it be reconvened in 2006 to complete its work. See ILC, *Fifty-Seventh Session*, at <http://untreaty.un.org/ilc/sessions/57/57sess.htm> (last visited Feb. 27, 2006). See also STEFANO BURCHI & KERSTIN MECHLEM, GROUNDWATER IN INTERNATIONAL LAW, COMPILATION OF TREATIES AND OTHER LEGAL INSTRUMENTS (U.N. Food and Agriculture Organization Legislative Study 86) (2005), available at [http://www.fao.org/documents/show\\_cdr.asp?url\\_file=/docrep/008/y5739e/y5739e02.htm](http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/008/y5739e/y5739e02.htm) (last visited Feb. 27, 2006).
60. See Wouters, *supra* note 2.
61. See U.N. I.L.C., U.N. REPORT OF THE INTERNATIONAL LAW COMMISSION—57TH SESSION (2005), available at <http://untreaty.un.org/ilc/reports/2005/2005report.htm> (last visited Mar. 6, 2006). For an overview and recent update on the Helsinki Convention, see Patricia Wouters & Sergei Vinogradov, *Analysing the ECE Water Convention: What Lessons for the Regional Management of Transboundary Water Resources?*, 2003/2004 Y.B. OF INT'L COOPERATION ON ENV'T & DEV. 55.
62. The Helsinki Convention provides:  
 “Transboundary waters” means any surface or ground waters which mark, cross or are located on boundaries between two or more States; wherever transboundary waters flow directly into the sea, these transboundary waters end at a straight line across their respective mouths between points on the low-water line of their banks.
- Helsinki Convention, *supra* note 4, art. 1(1).  
 The Convention goes on to state:  
 “Transboundary impact” means any significant adverse effect on the environment resulting from a change in the condi-
63. Article 1(3) of the Helsinki Convention provides, “‘Party’ means, unless the text otherwise indicates, a Contracting Party to this Convention.”
64. Article 1(4) of the Helsinki Convention provides, “‘Riparian Parties’ means the Parties bordering the same transboundary waters.” The more sophisticated obligations for riparian party are discussed further in this Article under the “substantive rules” section, below.
65. To see the list of parties, visit UNECE, *Status of Ratification of Water Convention*, at [http://www.unece.org/env/water/status/lega\\_wc.htm](http://www.unece.org/env/water/status/lega_wc.htm) (last visited Feb. 27, 2006). On November 28, 2003, the parties to the Helsinki Convention adopted amendments to Articles 25 and 26 following Switzerland's proposal to allow states situated outside the UNECE region to become parties to the Convention. Four countries have ratified the amendments, although 23 ratifications are necessary for the amendments to enter into force. Requests for accession by states outside the UNECE will not be considered until the amendments have entered into force for all the states and organizations that were parties to the Convention when the amendments were adopted. The amendment, set forth in “Decision III/1,” provides:
- Any other State, not referred to in paragraph 2, that is a Member of the United Nations may accede to the Convention upon approval by the Meeting of the Parties. In its instrument of accession, such a State shall make a declaration stating that approval for its accession to the Convention had been obtained from the Meeting of the Parties and shall specify the date on which approval was received. Any such request for accession by Members of the United Nations shall not be considered for approval by the Meeting of the Parties until this paragraph has entered into force for all the States and organizations that were Parties to the Convention on 28 November 2003.
- UNECE, AMENDMENT TO ARTICLES 25 AND 26 OF THE CONVENTION 2, U.N. Doc. ECE/MP.WAT/14 (2004), available at <http://www.unece.org/env/documents/2004/wat/ece.mp.wat.14.e.pdf> (last visited Mar. 6, 2006). For additional details, see UNECE, *Status of Ratification of the Amendments to the Water Convention*, at <http://www.unece.org/env/water/status/amend.htm> (last visited Feb. 27, 2006).
66. Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, signed June 17, 1999, entered into force Aug. 4, 2005, available at <http://www.unece.org/env/documents/2000/wat/mp.wat.2000.1.e.pdf> (last visited Feb. 27, 2006) [hereinafter London Protocol]. See UNECE, *Status of Ratification of the Protocol on Water and Health*, at [http://www.unece.org/env/water/status/lega\\_wh.htm](http://www.unece.org/env/water/status/lega_wh.htm) (last visited Feb. 27, 2006). The UNECE website sets forth the importance of this agreement:
- Nowadays, most Europeans take clean drinking water for granted. Yet, in the European part of the UNECE region alone, an estimated 120 million people, i.e., one person in seven, do not have access to safe drinking water and adequate

Protocol on Civil Liability.<sup>67</sup> Another UNECE multilateral instrument, the pan-European Espoo Environmental Impact Assessment Convention<sup>68</sup> adopted before the Helsinki Convention, nonetheless forms part of the UNECE package and should be taken into account on water-resources management issues.

The Helsinki Convention has also been the inspiration for a growing number of basin-specific agreements, which build upon the framework elements of the mother agreement. The most recent example of this is the agreement concluded by Moldova and the Ukraine on the Dniester River, "Transboundary Cooperation and Sustainable Management of the Dniester River."<sup>69</sup> Each European basin-specific

sanitation, making them vulnerable to water-related diseases, such as cholera, bacillary dysentery, coli infections, viral hepatitis A and typhoid. Cleaner water and better sanitation could prevent over 30 million cases of water-related disease [sic] each year in the region. The 1999 Protocol on Water and Health was negotiated with this in mind.

The main aim of the Protocol is to protect human health and well being by better water management, including the protection of water ecosystems, and by preventing, controlling and reducing water-related diseases. The Protocol is the first international agreement of its kind adopted specifically to attain an adequate supply of safe drinking water and adequate sanitation for everyone, and effectively protect water used as a source of drinking water.

To meet these goals, its Parties are required to establish national and local targets for the quality of drinking water and the quality of discharges, as well as for the performance of water supply and waste-water treatment. They are also required to reduce outbreaks and the incidence of water-related diseases.

This Protocol introduces a social component into cooperation on water management. Water resources management should link social and economic development to the protection of natural ecosystems. Moreover, improving the water supply and sanitation is fundamental in breaking the vicious cycle of poverty.

UNECE, *Protocol on Water and Health*, at [http://www.unece.org/env/water/text/text\\_protocol.htm](http://www.unece.org/env/water/text/text_protocol.htm) (last visited Mar. 6, 2006).

67. Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters, signed May 21, 2003, available at <http://www.unece.org/env/civil-liability/protocol.html> (last visited Feb. 27, 2006) [hereinafter Protocol on Civil Liability]. The Protocol, which will give individuals affected by the transboundary impact of industrial accidents on international watercourses a legal claim for adequate and prompt compensation, was signed by 22 countries on May 21, 2003, during the fifth Ministerial Conference "Environment for Europe" in Kiev, Ukraine. See UNECE, *Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters*, at <http://www.unece.org/env/civil-liability/welcome.html> (last visited Feb. 27, 2006). The Protocol has since been signed by 24 countries and ratified by 1. It will enter into force with 16 ratifications. UNECE, *Status of Ratification of the Protocol on Civil Liability*, at [http://www.unece.org/env/civil-liability/status\\_cl.html](http://www.unece.org/env/civil-liability/status_cl.html) (last visited Feb. 27, 2006). For more information, visit <http://www.unece.org/env/civil-liability/welcome.html>.
68. UNECE, *Convention on Environmental Impact Assessment in a Transboundary Context (Espoo, 1991)—The "Espoo (EIA) Convention,"* at <http://www.unece.org/env/eia/welcome.html> (last visited Feb. 27, 2006).
69. In December 2005, the UNECE, working with the Organization for Security and Co-operation in Europe, announced the successful conclusion of "a landmark agreement"—"Transboundary Cooperation and Sustainable Management of the Dniester River"—between the Republic of Moldova and Ukraine aimed at cleaning up the Dniester River. One of eastern Europe's largest rivers, the Dniester River suffered serious environmental problems from pollution and flow regime. More than 7 million people share the basin, and the river is the primary source of drinking water in the Republic of Moldova and parts of Ukraine (including Odessa). From its source in the Ukrai-

agreement concluded by riparian parties under the Helsinki Convention must define the new instrument's scope.<sup>70</sup> As noted above, this legal element must be carefully considered in each case, since it will determine the enforceable parameters of the agreement. Not surprisingly, special attention was given to the definition of "scope" under the Rhine and Danube Conventions.<sup>71</sup> For example, under the 1999 Rhine Convention, the "Rhine" is defined as:

[T]he Rhine from the outlet of Lake Untersee and, in the Netherlands, the branches Bovenrijn, Bijlands Kanaal, Pannerdensch Kanaal, IJssel, Nederrijn, Lek, Waal, Boven-Merwede, Beneden-Merwede, Noord, Oude Maas, Nieuwe Maas and Scheur and the Nieuwe Waterweg as far as the base line as specified in Article 5 in connection with Article 11 of the [U.N.] Convention on the Law of the Sea, the Ketelmeer and the IJsselmeer.<sup>72</sup>

Further, under Article 2 of the Rhine Convention, entitled "Scope," the Convention applies to:

(a) the Rhine; (b) ground water interacting with the Rhine; (c) aquatic and terrestrial ecosystems which interact or could again interact with the Rhine; (d) the Rhine catchment area, insofar as its pollution by noxious substances adversely affects the Rhine; (e) The Rhine catchment area, insofar as it is of importance for flood prevention and protection along the Rhine.<sup>73</sup>

These geological and ecological approaches to defining "scope" under the Rhine Convention provide for extensive coverage and create a broad jurisdictional reach that will affect directly the implementation and enforcement of the agreement. A slightly different approach was used in the 1994 Danube Convention, where the "scope" of the agreement is defined as a "catchment area," being "the hydrological river basin as far as it is shared by the contracting parties."<sup>74</sup> This definition appears to be less broad than the ap-

nian Carpathians, the Dniester River flows through the Republic of Moldova and reaches Ukraine again near the Black Sea. See Press Release, U.N., Agreement to Clean Up the River Dniester (Dec. 2, 2005), available at [http://www.unece.org/press/pr2005/05env\\_p08e.htm](http://www.unece.org/press/pr2005/05env_p08e.htm) (last visited Feb. 27, 2006).

70. Article 9 of the Helsinki Convention, *supra* note 4, provides that "Riparian Parties shall specify the catchment area, or part(s) thereof, subject to cooperation" in any agreements they might conclude.
71. Convention on the Protection of the Rhine, Apr. 12, 1999, 1404 U.N.T.S. 59, available at [http://www.iksrf.org/fileadmin/user\\_upload/documents/convention\\_on\\_the\\_protection\\_of\\_the\\_rhine.pdf](http://www.iksrf.org/fileadmin/user_upload/documents/convention_on_the_protection_of_the_rhine.pdf) (last visited Feb. 27, 2006) [hereinafter Rhine Convention]. Convention on Cooperation for the Protection and Sustainable Use of the Danube River (June 29, 1994), available at [http://www.icpdr.org/pls/danubis/danubis\\_db\\_dyn\\_navigator.show](http://www.icpdr.org/pls/danubis/danubis_db_dyn_navigator.show) (last visited Mar. 6, 2006) [hereinafter Danube Convention]. The Helsinki Convention also influenced, inter alia, the 1997 agreement between the Russian Federation and Estonia on Lake Peipsi and the 2002 agreement on the Sava River between Bosnia-Herzegovina, Croatia, Montenegro, Serbia, and Slovenia. Technical and legal assistance from the UNECE has been provided to Belarus, Latvia, Lithuania, and the Russian Federation for cooperation on the Daugava and the Nemunas, as well as for the setting-up of the transboundary water commission on the Chu and Talas Rivers shared by Kazakhstan and Kyrgyzstan. For more details, see UNECE, THE 1992 UNECE CONVENTION ON THE PROTECTION AN USE OF TRANSBOUNDARY WATERCOURSES AND INTERNATIONAL LAKES (2004), available at [http://unece.org/env/water/documents/brochure\\_water\\_convention.pdf](http://unece.org/env/water/documents/brochure_water_convention.pdf) (last visited Mar. 6, 2006). See also K. Hayward, *The Legal Regime of the Dniester* (LL.M. dissertation, IWLRI, University of Dundee, forthcoming 2006).
72. Rhine Convention, *supra* note 71, art. 1.
73. *Id.* art. 2.
74. Danube Convention, *supra* note 71.

proach taken under the Rhine Convention, and the legal issue would be to determine what is meant by a “catchment” area, a task that would require scientific input and guidance.

The EU WFD, with 25 Member States, adopts a basinwide approach to “scope” covering all surface and groundwater<sup>75</sup> with a view to achieving long-term sustainable water resources management based upon a high level of protection of the aquatic environment.<sup>76</sup> There is some concern that the WFD does not adequately cover groundwater (a “scope” issue), and a current initiative is underway to discuss whether this should be the subject of a new directive. Transboundary waters<sup>77</sup> are referred to throughout the WFD, but as these are not all found within the exclusive domestic domain of EU Member States, the WFD can only recommend that basinwide plans across national borders are undertaken. For example, a report is being prepared for the entire basin of the Danube River, which extends beyond the EU, by the Danube River Commission as the “competent authority.”<sup>78</sup> Similar plans are expected for the EU’s other European transboundary rivers, such as the Meuse, Rhine, and Scheldt Rivers. Clearly, such basinwide reports will require extensive cooperation within and beyond the EU and could provide working platforms to enhance European co-

operation more generally. It will be interesting to review these basinwide plans prepared under the EU WFD with a view to evaluating their impact on achieving the water quality objectives of the WFD.

### B. Substantive Rules

When examining a transboundary watercourse regime, the “substantive rules” are those that define the legality of existing or new uses. The question central to this line of inquiry is: are the existing and/or proposed new uses legally permissible? The rules of international law in this area are clear, both in terms of customary international law and treaty law—international (transboundary) watercourse states are entitled (and obliged) to an “equitable and reasonable use” of their shared waters.<sup>79</sup> These principles of “equity” and “reasonableness” provide the foundation and dynamics for a rule of law that is particularly suited to water—a resource that is not readily defined, nor controlled, by national borders, but which is called upon to meet a diverse variety of needs and demands. Thus, the legal question we ask in this section is: does the use (new or existing) qualify as an “equitable and reasonable” use?

The rule of equitable and reasonable utilization, which exists quite independently from treaty law, as an enforceable rule of customary international law is codified, to a large extent,<sup>80</sup> in Article 5 of the UNWC.<sup>81</sup> How this rule is to be implemented can be found in Article 6 of the Convention, which provides a non-exhaustive list of factors and proposed methodology for operationalizing the rule in practice. Watercourse states are required to consider “all relevant factors,” with a conclusion to be made “on the basis of the whole.”<sup>82</sup> Thus, all social, environmental, economic, and hydrographic factors are to be identified, given due weight, and evaluated together in order to determine whether or not the proposed use is “equitable and reasonable.”<sup>83</sup> Where there is not enough water to meet all needs and a conflict-of-use arises, the UNWC provides that “vital human needs” should be given a priority, under Article 10.<sup>84</sup> In research work in this field, it has been suggested that “vital environmental needs” should also be given a priority in such a situation.<sup>85</sup> The UNWC provides a clear substantive rule supported by an operational framework for evaluating the legality of the ongoing development and use of shared international waters. The rule benefits from a built-in flexi-

75. WFD, *supra* note 5.

76. The WFD requires Member States to manage their waters (inland surface waters, transitional waters, coastal waters, and groundwater) according to river basin management districts with the overall objective of promoting “sustainable water use based on long-term protection of available water resources” and achieving good water status within a certain time frame and to established basic requirements. The WFD provides:

Surface waters and groundwaters are in principle renewable natural resources; in particular, the task of ensuring good status of groundwater requires early action and stable long-term planning of protective measures, owing to the natural time lag in its formation and renewal. Such time lag for improvement should be taken into account in timetables when establishing measures for the achievement of good status of groundwater and reversing any significant and sustained upward trend in the concentration of any pollutant in groundwater.

WFD, *supra* note 5, pmb. ¶ 28.

77. The WFD provides:

Common principles are needed in order to coordinate Member States’ efforts to improve the protection of Community waters in terms of quantity and quality, to promote sustainable water use, to contribute to the control of transboundary water problems, to protect aquatic ecosystems, and terrestrial ecosystems and wetlands directly depending on them, and to safeguard and develop the potential uses of Community waters.

WFD, *supra* note 5, ¶ 23. It goes on to provide:

Within a river basin where use of water may have transboundary effects, the requirements for the achievement of the environmental objectives established under this Directive, and in particular all programmes of measures, should be coordinated for the whole of the river basin district. For river basins extending beyond the boundaries of the Community, Member States should endeavour to ensure the appropriate coordination with the relevant non-member States. This Directive is to contribute to the implementation of Community obligations under international conventions on water protection and management, notably the United Nations Convention on the protection and use of transboundary water courses and international lakes, approved by Council Decision 95/308/EC(1) and any succeeding agreements on its application.

*Id.* ¶ 35.

78. See DANUBE BASIN ANALYSIS, *supra* note 32. The international aspects of the basin are covered in Part I, and a series of national reports are compiled in Part II.

79. See WOUTERS, *supra* note 54.

80. See Patricia Wouters, *An Assessment of Recent Developments in International Watercourse Law Through the Prism of the Substantive Rules Governing Use Allocation*, 36 NAT. RESOURCES J. 417 (1996).

81. The UNWC provides:

Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilization thereof and benefits therefrom, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse.

UNWC, *supra* note 2, art. 5.

82. *Id.* arts. 6 and 6(3).

83. *Id.* arts. 6 and 10.

84. *Id.* art. 10(2). See also WOUTERS ET AL., *supra* note 45.

85. WOUTERS ET AL., *supra* note 38.



bility that is buttressed by a transparent, predictable, and enforceable methodology.<sup>86</sup>

The rule of equitable and reasonable use finds expression in the numerous multilateral and bilateral water-related treaties across Europe, and notably, can be found at the heart of the Helsinki Convention. While the primary substantive rule of this instrument is the prevention of adverse transboundary impact, this overall objective must be considered in the broader context of water resources management, where developmental and environmental concerns are relevant factors to consider.

The overarching rule of the Helsinki Convention, under Article 2, requires states party to the Convention to “take all appropriate measures to prevent, control and reduce any transboundary impact.”<sup>87</sup> More specifically, states party to the Convention agree to:

take all appropriate measures: (a) To prevent, control and reduce pollution of waters causing or likely to cause transboundary impact; (b) To ensure that transboundary waters are used with the aim of ecologically sound and rational water management, conservation of water resources and environmental protection; (c) To ensure that transboundary waters are used in a reasonable and equitable way, taking into particular account their transboundary character, in the case of activities which cause or are likely to cause transboundary impact; (d) To ensure conservation and, where necessary, restoration of ecosystems.<sup>88</sup>

Thus, the goal of transboundary pollution control is embedded within the requirement that “transboundary waters are used in an equitable and reasonable way.” This approach is adopted across the realm of UNECE-inspired, water-related agreements concluded under the Helsinki Convention.

The objective of the EU WFD is to “establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater” that prevents deterioration and promotes sustainable development.<sup>89</sup> In line with this, the overall aim of the WFD is to achieve “good water status” in all waters.<sup>90</sup> Article 4.1 provides that good water status is to be achieved in all surface and groundwater bodies by 2015, and introduces the principle of prevention, requiring measures to prevent further deterioration of the existing status of EU waters. Exemptions to these overarching objectives are permitted, and Member States are allowed to adopt less stringent goals and extend compliance deadlines beyond 2015, provided that certain conditions are fulfilled. In line with EU practice, in implementing directives, each Member State is required to achieve the objectives of the WFD, but are left to their own devices to determine how

these are best accomplished at the national level.<sup>91</sup> While the WFD declares at its outset that water is considered to be a special “heritage” (not a commercial product) that must be protected,<sup>92</sup> it does require that service delivery is paid for, and that costs are recovered.<sup>93</sup> How this will be implemented at national levels remains to be seen and is the subject of ongoing reporting requirements. Thus, from a substantive rule perspective, the EU WFD requires Member States to identify, monitor, and improve the status of their freshwater. Since the “scope” of the WFD includes transboundary waters that extend beyond EU Member States, delicate jurisdictional issues arise as to the enforceability of the substantive rules of the WFD beyond EU borders, and this will require closer study.<sup>94</sup>

91. For a discussion of how Scotland is implementing the WFD, see Sarah Hendry et al., *River Basin Planning in Scotland and the European Community*, in *HYDROLOGY AND WATER LAW*, *supra* note 52. See also Sarah Hendry, *Scottish Strategic Issues*, 16 *J. WATER L.* 98-102 (2005).

92. The WFD begins: “Water is not a commercial product like any other but, rather, a heritage which must be protected, defended and treated as such.”

93. Article 9 of the WFD provides:

Recovery of costs for water services

1. Member States shall take account of the principle of recovery of the costs of water services, including environmental and resource costs, having regard to the economic analysis conducted according to Annex III, and in accordance in particular with the polluter pays principle.

Member States shall ensure by 2010

- that water-pricing policies provide adequate incentives for users to use water resources efficiently, and thereby contribute to the environmental objectives of this Directive,
- an adequate contribution of the different water uses, disaggregated into at least industry, households and agriculture, to the recovery of the costs of water services, based on the economic analysis conducted according to Annex III and taking account of the polluter pays principle.

Member States may in so doing have regard to the social, environmental and economic effects of the recovery as well as the geographic and climatic conditions of the region or regions affected.

2. Member States shall report in the river basin management plans on the planned steps towards implementing paragraph 1 which will contribute to achieving the environmental objectives of this Directive and on the contribution made by the various water uses to the recovery of the costs of water services.

3. Nothing in this Article shall prevent the funding of particular preventive or remedial measures in order to achieve the objectives of this Directive.

4. Member States shall not be in breach of this Directive if they decide in accordance with established practices not to apply the provisions of paragraph 1, second sentence, and for that purpose the relevant provisions of paragraph 2, for a given water-use activity, where this does not compromise the purposes and the achievement of the objectives of this Directive. Member States shall report the reasons for not fully applying paragraph 1, second sentence, in the river basin management plans.

94. The WFD provides:

Within a river basin where use of water may have transboundary effects, the requirements for the achievement of the environmental objectives established under this Directive, and in particular all programmes of measures, should be coordinated for the whole of the river basin district. For river basins extending beyond the boundaries of the Community, Member States should endeavour to ensure the appropriate coordination with the relevant non-member States. This Directive is to contribute to the implementation of Community obligations under international conventions on water protection and

86. WOUTERS ET AL., *supra* note 45.

87. Helsinki Convention, *supra* note 4, art. 2.

88. *Id.* art. 2(2).

89. WFD, *supra* note 5, art. 1.

90. The WFD provides:

Member States should aim to achieve the objective of at least good water status by defining and implementing the necessary measures within integrated programmes of measures, taking into account existing Community requirements. Where good water status already exists, it should be maintained. For groundwater, in addition to the requirements of good status, any significant and sustained upward trend in the concentration of any pollutant should be identified and reversed.

*Id.* pmbi. ¶ 26.

### C. Procedural Rules

Procedural rules provide the means through which the substantive rules are implemented and provide a framework for the ongoing peaceful management of the watercourse regime, which often changes over time. The distinction between the “substantive” and “procedural” obligations is made here for analytical purposes in order to better understand and compare treaty regimes. In fact, “procedural” rules are just as legally binding as “substantive” rules—each represent international legal obligations, the violation of which may entail state responsibility.<sup>95</sup> A breach of any rule of international law (substantive or procedural) will give rise to a range of new obligations, ranging from the requirement of cessation to the duty to make appropriate reparation.

Generally, water-related treaties contain procedural rules that establish a range of obligations—from the general duty to cooperate to more specific obligations related to the collection and exchange of data and requirements for notification and consultation.

Read together, the procedural rules set forth in the 1997 UNWC provide a model framework for managing the ongoing legal regime of the shared watercourse. The procedural means for implementing the substantive rule of “equitable and reasonable use” (contained in Article 5) are contained in Articles 8 and 9, which require cooperation among watercourse states and create a general duty to regularly exchange data and information about the watercourse. These general obligations are elaborated with more detail in Part Three of the Convention, which provides a number of procedures—ranging from exchange of information,<sup>96</sup> notification,<sup>97</sup> and consultations<sup>98</sup>—required to be followed in the event of “planned measures.” These procedures provide a clear package of rules that watercourse states are required to follow when they seek to develop a new or increased use. This procedural package is a valuable tool that offers transparency, predictability, and enforceability and should be considered more closely by watercourse states who have yet to enter into agreements, such as Central Asia, China, and Meso-America. The framework has been closely followed by states around the world and can be found in regional agreements, such as the 2000 Revised Protocol for the Southern African Development Community (SADC),<sup>99</sup>

management, notably the United Nations Convention on the protection and use of transboundary water courses and international lakes, approved by Council Decision 95/308/EC(15) and any succeeding agreements on its application.

WFD, *supra* note 5, pmbl. ¶ 35.

95. See Patricia Wouters, *State Responsibility in Economic Relations: The Case of the Energy Charter Treaty*, HOFSTRA J. INT'L L. 117 (1997); see also U.N., RESPONSIBILITY OF STATES FOR INTERNATIONAL WRONGFUL ACTS (2005), available at [http://untreaty.un.org/ilc/texts/instruments/english/draft%20articles/9\\_6\\_2001.pdf](http://untreaty.un.org/ilc/texts/instruments/english/draft%20articles/9_6_2001.pdf) (last visited Mar. 6, 2006).
96. UNWC, *supra* note 2, art. 11.
97. *Id.* arts. 12-16, 18-19. These provisions cover a range of issues ranging from timing of notification, response to notification, and what should occur in the absence of notification, or where there is need for urgent implementation of planned measures.
98. *Id.* art. 17.
99. Revised Protocol on Shared Watercourses in the Southern African Development Community, Aug. 7, 2000, 40 I.L.M. 317 (2001) [hereinafter SADC Protocol]. The 2000 Revised Protocol was signed by: Angola, Botswana, Congo, Lesotho, Malawi, Mauritius,

the 1995 Mekong Agreement,<sup>100</sup> and the 2002 Russian-Byelorussia Agreement on Cooperation.<sup>101</sup>

The Helsinki Convention provides a two-tiered set of procedural rules as the foundation for implementing the substantive rules related to pollution prevention and limiting adverse transboundary impact. The Convention, with some 35 parties, divides these into two categories: “Parties” and “Riparian Parties.” The former category has a list of rules set forth in Part I; the latter grouping has a more detailed set of rules contained in Part II. For example, “Riparian Parties” are required to pursue closer cooperation through the conclusion of new agreements (bilateral or multilateral) in line with the Convention,<sup>102</sup> to undertake consultations,<sup>103</sup> to establish joint monitoring and assessment programs,<sup>104</sup> to undertake common research and development,<sup>105</sup> to exchange information,<sup>106</sup> to establish early warning and alarm systems,<sup>107</sup> and to render mutual assistance during “critical” situations.<sup>108</sup> These procedural requirements foster operational cooperation, which is vital to transboundary waters management. In fact, a survey of the work of the UNECE reveals considerable investment in these areas, with relatively successful results.

The EU WFD is constructed upon a series of specific procedural requirements—the very foundation of this legal regime requires the classification, reporting, and monitoring of river basins across (and beyond) the EU. Under the WFD, Member States are required to identify and classify national<sup>109</sup> and transboundary river basins,<sup>110</sup> to designate

Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe and in accordance with Article 10 will enter into force 30 days after the deposit of the instruments of ratification by two-thirds of the Member States. See also Treaty of the Southern African Development Community (SADC), Aug. 17 1992, 32 I.L.M. 120 (1993) [hereinafter SADC Treaty]. The treaty was amended by agreement on August 14, 2001. The SADC countries comprise: Angola, Botswana, Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe. For more information and to see the text of the treaties and protocol, visit the SADC website at <http://www.sadc.int/overview/treaty.htm> (last visited Feb. 27 2006).

100. Agreement on the Cooperation for the Sustainable Development of the Mekong Basin, 34 I.L.M. 864 (1995) [hereinafter Mekong Agreement].
101. 2002 Russian-Byelorussia Agreement on Cooperation.
102. Helsinki Convention, *supra* note 4, art. 9, contains a long list of obligations with respect to the proposed provisions in new agreements.
103. Helsinki Convention, *supra* note 4, art. 10.
104. *Id.* art. 11.
105. *Id.* art. 12.
106. *Id.* art. 13.
107. *Id.* art. 14.
108. *Id.* art. 15.
109. The WFD provides:

Coordination of administrative arrangements within river basin districts

Art. 3(1). Member States shall identify the individual river basins lying within their national territory and, for the purposes of this Directive, shall assign them to individual river basin districts. Small river basins may be combined with larger river basins or joined with neighbouring small basins to form individual river basin districts where appropriate. Where groundwaters do not fully follow a particular river basin, they shall be identified and assigned to the nearest or most appropriate river basin district. Coastal waters shall be identified and assigned to the nearest or most appropriate river basin district or districts.

Art. 3(2). Member States shall ensure the appropriate administrative arrangements, including the identification of the ap-

competent authorities for the basin,<sup>111</sup> and to devise management plans and “programmes of measures,”<sup>112</sup> in line with the EU policy of ecosystem protection.<sup>113</sup> While the

appropriate competent authority, for the application of the rules of this Directive within each river basin district lying within their territory. . . .

Art. 3(7). Member States shall identify the competent authority by the date mentioned in Article 24.

WFD, *supra* note 5, art. 3.

110. The WFD provides:

Member States shall ensure that a river basin covering the territory of more than one Member State is assigned to an international river basin district. At the request of the Member States involved, the Commission shall act to facilitate the assigning to such international river basin districts.

Each Member State shall ensure the appropriate administrative arrangements, including the identification of the appropriate competent authority, for the application of the rules of this Directive within the portion of any international river basin district lying within its territory.

*Id.* art. 3(3). The WFD continues:

Member States shall ensure that the requirements of this Directive for the achievement of the environmental objectives established under Article 4, and in particular all programmes of measures are coordinated for the whole of the river basin district. For international river basin districts the Member States concerned shall together ensure this coordination and may, for this purpose, use existing structures stemming from international agreements. At the request of the Member States involved, the Commission shall act to facilitate the establishment of the programmes of measures.

*Id.* art. 3(4). Article 3(5) provides:

Where a river basin district extends beyond the territory of the Community, the Member State or Member States concerned shall endeavour to establish appropriate coordination with the relevant non-Member States, with the aim of achieving the objectives of this Directive throughout the river basin district. Member States shall ensure the application of the rules of this Directive within their territory.

Article 3(6) states: “Member States may identify an existing national or international body as competent authority for the purposes of this Directive.”

111. Article 3(3) of the WFD provides: “Each Member State shall ensure the appropriate administrative arrangements, including the identification of the appropriate competent authority, for the application of the rules of this Directive within [each] river basin district lying within [their] territory.”

112. The WFD’s provision on EU WFD, Article 11 “Programme of measures,” provides:

Each Member State shall ensure the establishment for each river basin district, or for the part of an international river basin district within its territory, of a programme of measures, taking account of the results of the analyses required under Article 5, in order to achieve the objectives established under Article 4. Such programmes of measures may make reference to measures following from legislation adopted at national level and covering the whole of the territory of a Member State. Where appropriate, a Member State may adopt measures applicable to all river basin districts and/or the portions of international river basin districts falling within its territory.

*Id.* art. 11(1).

113. The WFD’s provision on “River basin management plans” provides:

1. Member States shall ensure that a river basin management plan is produced for each river basin district lying entirely within their territory.

2. In the case of an international river basin district falling entirely within the Community, Member States shall ensure coordination with the aim of producing a single international river basin management plan. Where such an international river basin management plan is not produced, Member States shall produce river basin management plans covering at least

implementation of these measures may be phased in,<sup>114</sup> and some derogations are permitted,<sup>115</sup> basinwide reports must be regularly updated and reviewed. The first attempts at completing these reports have been difficult, with some “uncertainty” and “incompleteness” during this so-called trial run.<sup>116</sup> The basinwide report on the Danube River Basin in line with the requirements of the EU WFD, however, provides insight into the level of detailed reporting required and demonstrates how the procedural requirements are managed for river basins extending beyond EU borders.<sup>117</sup> This procedural approach offers a unique opportunity for regional cooperation and is an integral element of effective basinwide management regimes.

#### D. Institutional Mechanisms

Most transboundary watercourse agreements establish a joint bodies or river basin commission or organization as an essential mechanism for good water “governance.”<sup>118</sup> These

those parts of the international river basin district falling within their territory to achieve the objectives of this Directive.

3. In the case of an international river basin district extending beyond the boundaries of the Community, Member States shall endeavour to produce a single river basin management plan, and, where this is not possible, the plan shall at least cover the portion of the international river basin district lying within the territory of the Member State concerned.

4. The river basin management plan shall include the information detailed in Annex VII.

5. River basin management plans may be supplemented by the production of more detailed programmes and management plans for sub-basin, sector, issue, or water type, to deal with particular aspects of water management. Implementation of these measures shall not exempt Member States from any of their obligations under the rest of this Directive.

6. River basin management plans shall be published at the latest nine years after the date of entry into force of this Directive.

7. River basin management plans shall be reviewed and updated at the latest 15 years after the date of entry into force of this Directive and every six years thereafter.

*Id.* art. 13.

114. Paragraph 29 of the WFD’s preambular language provides: “In aiming to achieve the objectives set out in this Directive, and in establishing a programme of measures to that end, Member States may phase implementation of the programme of measures in order to spread the costs of implementation.”

115. Article 4(5) of the WFD provides:

Member States may aim to achieve less stringent environmental objectives than those required under paragraph 1 for specific bodies of water when they are so affected by human activity, as determined in accordance with Article 5(1), or their natural condition is such that the achievement of these objectives would be infeasible or disproportionately expensive, and all the following conditions . . . .

116. See William Howarth, *From the Framework Directive to the Marine Framework Directive*, 16 J. WATER L. 83-84 (2005). This article also discusses current progress on the newly proposed Marine Framework Directive, which is modelled largely on the WFD. There also appears to be an emerging new flood management directive under consideration. See Andrew Farmer, *A European Union Directive on Flood Management*, 16 J. WATER L. 85-89 (2005).

117. See DANUBE BASIN ANALYSIS, *supra* note 32.

118. The term “governance” is used rather indiscriminately in the field of water resources management and has a range of meanings across disciplines. In the water law arena, it has evolved into a rather technical definition to mean the system under which water resources are managed. See Patricia Wouters & Alistair Rieu-Clarke, *The Role of International Water Law in Ensuring “Good Water Governance”*: A Call for Renewed Focus and Action, 15 J. WATER L. 89 (2004); and Patricia Wouters & Andrew Allan, *What Role for Water Law in the Emerging “Good Governance” Debate?*, 15 J. WATER L. 85 (2004).



organs are used both as permanent institutional mechanisms of interstate cooperation and, more specifically, as important vehicles for managing competing interests, thereby providing a front-line for dispute avoidance. In addition to their primary function of coordinating the development and management of transboundary watercourses, institutional mechanisms commonly provide technical expertise, which facilitates the peaceful management of shared waters. Good examples outside of Europe include the International Joint Commission (Canada-United States),<sup>119</sup> the International Boundary and Water Commission (Mexico-United States),<sup>120</sup> the Mekong River Commission,<sup>121</sup> and the Indus River Commission.<sup>122</sup> Each of these bodies has succeeded to manage international watercourses shared across borders, without disputes being brought to third-party dispute resolution.

The UNWC leaves it to the parties to establish joint bodies to manage their international watercourses.<sup>123</sup> This is an expected (and welcome) approach from a global framework agreement, which was formulated to provide guidelines for watercourse states around the world. Regional agreements patterned on the UNWC, for example in southern Africa<sup>124</sup> and Asia,<sup>125</sup> have followed this suggestion and developed

river basin commissions to manage their shared international watercourses. The SADC Revised Protocol established the SADC Commission to implement the agreement. Similarly, the Mekong River Commission oversees and assists with the management and development of the regime governing the Mekong.<sup>126</sup>

In Europe, the UNECE Helsinki Convention recommends that Riparian Parties establish joint bodies to manage their transboundary waters.<sup>127</sup> In addition to this, and aimed at all parties to the Convention, Article 17 establishes a mechanism called the "Meeting of the Parties," which serves as a forum, both informally and formally, to implement the agreement through regular meetings<sup>128</sup> and an agreed joint work program.<sup>129</sup> Current projects under the umbrella of the Helsinki Convention include the consideration of a compliance review procedure and support for enhanced public participation. The Meeting of the Parties continues to actively monitor implementation of the Helsinki Convention and foster regional cooperation based upon transboundary water resources management.

In line with the requirements of the Helsinki convention, a number of joint bodies have been established across Europe to manage shared waters, such as the Black Sea Commission,<sup>130</sup> the Helsinki Commission,<sup>131</sup> the Danube Commission,<sup>132</sup> and the Rhine Commission,<sup>133</sup> to name just a

119. The International Joint Commission's mission statement provides: "The International Joint Commission prevents and resolves disputes between the United States of America and Canada under the 1909 *Boundary Waters Treaty* and pursues the common good of both countries as an independent and objective advisor to the two governments." International Joint Commission website, at [http://www.ijc.org/en/home/main\\_accueil.htm](http://www.ijc.org/en/home/main_accueil.htm) (last visited Feb. 28, 2006).

120. The International Boundary Water Commission (IBWC) has "responsibility for applying the boundary and water treaties between the United States and Mexico and settling differences that may arise out of these treaties. The IBWC is an international body composed of the United States Section and the Mexican Section, each headed by an Engineer-Commissioner appointed by his/her respective president." International Boundary Water Commission website, at <http://www.ibwc.state.gov/> (last visited Feb. 28, 2006).

121. The Mekong River Commission was established on April 5, 1995, by an agreement between the governments of Cambodia, Lao PDR, Thailand, and Viet Nam. The Commission "provides the institutional framework to promote regional cooperation in order to implement the 1995 Agreement. The [Mekong River Commission] serves its member states by supporting decisions and promoting action on sustainable development and poverty alleviation as a contribution to the U.N. Millennium Development Goals." Mekong River Commission website, at <http://www.mrcmekong.org/> (last visited Feb. 28, 2006).

122. See *Indus Waters Treaty*, 419 U.N.T.S. 126 (1962), available at <http://siteresources.worldbank.org/INTSOUTHASIA/Resources/223497-1105737253588/IndusWatersTreaty1960.pdf> (last visited Feb. 28, 2006).

123. The UNWC provides:

Watercourse States shall, at the request of any of them, enter into consultations concerning the management of an international watercourse, which may include the establishment of a joint management mechanism. For the purposes of this article, "management" refers, in particular, to: (a) Planning the sustainable development of an international watercourse and providing for the implementation of any plans adopted; and (b) Otherwise promoting the rational and optimal utilization, protection and control of the watercourse.

UNWC, *supra* note 2, art. 24.

124. See SADC Protocol, *supra* note 99 (which creates a range of institutional mechanisms). See also Patricia Wouters, *Universal and Regional Approaches to Resolving International Disputes: What Lessons Learned From State Practice*, in *RESOLUTION OF INTERNATIONAL WATER DISPUTES* (Int'l Bureau of the Permanent Court of Arbitration ed., Kluwer Law Int'l 2003).

125. See Mekong Agreement, *supra* note 100; Wouters, *supra* note 124. See also the institutional arrangements established under the Indus Waters Treaty, *supra* note 122.

126. Mekong River Commission website, *supra* note 121.

127. Helsinki Convention, *supra* note 4, art. 9(2).

128. The Helsinki Convention's provision on "Meeting of Parties" requires that the "first meeting of the Parties shall be convened no later than one year after the date of the entry into force" and "thereafter, ordinary meetings shall be held every three years, or at shorter intervals as laid down in the rules of procedure." *Id.* art. 17. At their meetings:

[T]he Parties shall keep under continuous review the implementation of this Convention, and, with this purpose in mind, shall: (a) Review the policies for and methodological approaches to the protection and use of transboundary waters of the Parties with a view to further improving the protection and use of transboundary waters; (b) Exchange information regarding experience gained in concluding and implementing bilateral and multilateral agreements or other arrangements regarding the protection and use of transboundary waters to which one or more of the Parties are party; (c) Seek, where appropriate, the services of relevant [UNECE] bodies as well as other competent international bodies and specific committees in all aspects pertinent to the achievement of the purposes of this Convention; (d) At their first meeting, consider and by consensus adopt rules of procedure for their meetings; (e) Consider and adopt proposals for amendments to this Convention; (f) Consider and undertake any additional action that may be required for the achievement of the purposes of this Convention.

*Id.*

129. UNECE, Meeting of the Parties to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Report of the First Meeting (Aug. 12, 1997) (on file with author). The Working Plan sets forth a series of program areas including the establishment of joint bodies, providing assistance to countries with economies in transition, setting up a system of integrated management of water and related ecosystems, control of land-based pollution, and the prevention, control, and reduction of water-related diseases.

130. Visit the Commission for the Protection of the Black Sea Against Pollution website at <http://www.blacksea-commission.org/> (last visited Feb. 27, 2006).

131. Visit the Helsinki Commission Baltic Marine Environment Protection Commission website at <http://www.blacksea-commission.org/> (last visited Feb. 27, 2006).

132. Visit the International Commission for the Protection of the Danube River website at [http://www.icpdr.org/pls/danubis/danubis\\_db.dyn\\_navigator.show](http://www.icpdr.org/pls/danubis/danubis_db.dyn_navigator.show) (last visited Feb. 27, 2006).

few. The 1998 Rhine Convention<sup>134</sup> has developed a strong operational role for the Commission, including a relatively advanced compliance system that merits deeper consideration.<sup>135</sup> Consistent with Article 9 of the Helsinki Convention, the Rhine Commission has considerable powers to monitor compliance,<sup>136</sup> including a mandate to make “decisions” regarding the measures to be implemented by the parties.<sup>137</sup> This approach is rather unique, both regionally and internationally, and provides a showcase model meriting closer examination, with a view to possible replication in other international settings. However, as is the case with most transboundary rivers, there are many circumstances that must be understood before this can be done—issues defined primarily by the local stakeholders at the local and re-

gional levels. Nevertheless, this regional example is one that should be considered more deeply in the international context as a possible “best practice.”

The WFD requires national governments of EU Member States to identify the administrative bodies that will implement the directive, designating “competent authorities” responsible for reporting and managing river basins, covering all waters in the EU.<sup>138</sup> It also establishes a “Regulatory Committee”<sup>139</sup> to support monitoring efforts. As mentioned above, the Danube River Commission has been designated the competent authority for the Danube River under the WFD and has since undertaken this responsibility. It is expected that a similar approach will be taken for all other EU transboundary waters.

133. Visit the International Commission for the Protection of the Rhine website at <http://www.iksr.org/> (last visited Feb. 27, 2006).

134. See Rhine Convention, *supra* note 71.

135. See Wouters, *supra* note 124.

136. The Rhine Convention’s provision on “Tasks of the Commission” provides:

1. In order to achieve the tasks according to Article 3 of this Convention, the Commission has the following assignments: (a) to prepare international monitoring programmes and analyses of the Rhine ecosystem and to evaluate their results, also in co-operation with scientific institutions; (b) to elaborate proposals for different measures and programmes of measures, eventually including economic instruments and taking into account expected costs; (c) to co-ordinate the Contracting Parties’ warning and alarm plans for the Rhine; (d) to evaluate the effectiveness of the measures decided on, in particular on the basis of the reports of the Contracting Parties and the results of monitoring programmes and analyses of the Rhine ecosystem; (e) to carry out any other tasks upon the instructions of the Contracting Parties.
2. To this end, the Commission takes decisions according to Articles 10 and 11.
3. The Commission annually presents a progress report.
4. The Commission informs the public on the state of the Rhine and the results of its work. It may draft and publish reports.

Rhine Convention, *supra* note 71, art. 8.

137. The Rhine Convention’s provision on the “Implementation of Commission Decisions” provides:

1. According to article 8, paragraph 1, sub-paragraph b) the Commission addresses its decisions on measures as recommendations to the Contracting Parties. The implementation is carried out according to the national law of the Contracting Parties. 2. The Commission may decide that these decisions (a) are to be implemented by the Contracting Parties within a certain time limit; (b) are to be co-ordinated and implemented. 3. The Contracting Parties regularly report to the Commission (a) on legislative, regulatory or other measures taken with a view to implementing the rules of the Convention and the decisions of the Commission; (b) on the results of the measures implemented according to sub-paragraph a); (c) on problems arising due to the implementation of measures according to a). 4. Should a Contracting Party not be able to implement the decisions of the Commission or only be able to partly implement them it will inform the others within a certain time limit individually set by the Commission and explain the reasons. Each delegation may move for consultations; such a move must be met within two months. On the basis of the reports of the Contracting Parties or on the basis of consultations the Commission may decide on measures supporting the implementation of decisions. The Commission keeps a list of its decisions addressed to the Contracting Parties. 5. The Contracting Parties annually add the state of implementation of the Commission’s decisions to this list, at latest two months before the Plenary Session of the Commission.

*Id.* art. 11.

### *E. Dispute Prevention/Compliance Monitoring*

How does one ensure the peaceful implementation of legal regimes for international watercourses? This usually requires a system for monitoring compliance<sup>140</sup> and, where problems arise, for preventing and resolving disputes.<sup>141</sup> In line with the U.N. Charter,<sup>142</sup> states have a number of avenues—both diplomatic and judicial—for preventing and resolving disputes. In many instances, institutional mechanisms facilitate compliance and dispute prevention, although controversial issues are rarely resolved at such a level. Where possible disputes arise, states are required by the U.N. Charter to resolve their disputes peacefully<sup>143</sup> through “negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means.”<sup>144</sup> Each of these

138. The WFD provides:

- (2). Member States shall ensure the appropriate administrative arrangements, including the identification of the appropriate competent authority, for the application of the rules of this Directive within each river basin district lying within their territory.
- (3). Member States shall ensure that a river basin covering the territory of more than one Member State is assigned to an international river basin district. At the request of the Member States involved, the Commission shall act to facilitate the assigning to such international river basin districts. Each Member State shall ensure the appropriate administrative arrangements, including the identification of the appropriate competent authority, for the application of the rules of this Directive within the portion of any international river basin district lying within its territory.

WFD, *supra* note 5, art. 3(2) and (3).

139. *Id.* art. 21.

140. See Patricia Wouters, Geneva Strategy and Framework for Monitoring Compliance With Agreements on Transboundary Waters: Elements of a Proposed Compliance Review Procedure (Expert’s Report), U.N. Doc. MP. WAT/2000/5 and Add. 1 (2000).

141. See generally Wouters, *supra* note 124.

142. Charter of the United Nations, signed June 26, 1945, entered into force Oct. 24, 1945. 1369 U.N.T.S. 181, available at <http://www.un.org/aboutun/charter/> (last visited Feb. 27, 2006) [hereinafter U.N. Charter]. Article 2(3) provides: “All Members shall settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered.”

143. U.N. Charter, Article 2(3), provides: “All Members shall settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered.”

144. U.N. Charter, Article 33, provides: “The parties to any dispute, the continuance of which is likely to endanger the maintenance of international peace and security, shall, first of all, seek a solution by negotiation, enquiry, mediation, conciliation, arbitration, judicial settle-

methods have been used by states to resolve international water disputes, with the most common recourse to negotiations, good offices, and fact-finding, supported by the use of joint bodies and regional institutions.

The diplomatic and judicial approaches to dispute settlement have been extensively examined in a broad context,<sup>145</sup> in a more specific manner with relation to international environmental disputes,<sup>146</sup> and, of direct relevance to this Article, in several studies on international waters,<sup>147</sup> including, most recently, a World Water Assessment Program study sponsored by the U.N. Educational, Scientific, and Cultural Organization entitled "From Potential Conflict to Cooperation Potential."<sup>148</sup> A critical review of state practice reveals a common endorsement by watercourse states of the use of institutional mechanisms as a first line of dispute avoidance, and there is a newly emerging trend to invoke compliance review and verification procedures as an innovation in this field.<sup>149</sup>

The UNWC expressly provides for dispute settlement in its Article 33,<sup>150</sup> which is intended to allow the parties to resolve the dispute in an amicable and expeditious manner and to prevent the dispute from escalating.<sup>151</sup> This so-called

ment, resort to regional agencies or arrangements, or other peaceful means of their own choice."

145. See, e.g., J.G. MERRILLS, *INTERNATIONAL DISPUTE SETTLEMENT* (1991).

146. *INTERNATIONAL INVESTMENTS AND THE PROTECTION OF THE ENVIRONMENT: THE ROLE OF DISPUTE RESOLUTION MECHANISMS* (Annex I: Guidelines for Negotiating and Drafting Dispute Settlement Clauses for International Environmental Agreements) (Int'l Bureau of the Permanent Court of Arbitration ed., Kluwer Law Int'l 2000). See also CESARE P.R. ROMANO, *THE PEACEFUL SETTLEMENT OF INTERNATIONAL ENVIRONMENTAL DISPUTES: A PRAGMATIC APPROACH* (Kluwer Law Int'l 2000).

147. See, e.g., ATTILA TANZI & MAURIZIO ARCARI, *THE UNITED NATIONS CONVENTION ON THE LAW OF INTERNATIONAL WATERCOURSE* (Kluwer Law Int'l 2001); and Charles B. Bourne, *Mediation, Conciliation and Adjudication in the Settlement of International Draining Basin Disputes*, 9 CANADIAN Y.B. OF INT'L L. 114 (1971), reprinted in PATRICIA K. WOUTERS, *INTERNATIONAL WATER LAW: SELECTED WRITINGS OF PROFESSOR CHARLES B. BOURNE 197* (Kluwer Law Int'l 1997).

148. WOUTERS ET AL., *supra* note 38.

149. UNECE & U.N. ENVIRONMENT PROGRAMME, *GENEVA STRATEGY AND FRAMEWORK OF MONITORING COMPLIANCE WITH AGREEMENTS ON TRANSBOUNDARY WATERS* U.N. Doc. MP. Water/2000/ (1999).

150. The UNWC's provision on "Settlement of Disputes" provides, inter alia:

In the event of a dispute between two or more Parties concerning the interpretation or application of the present Convention, the Parties concerned shall, in the absence of an applicable agreement between them, seek a settlement of the dispute by peaceful means in accordance with the following provisions.

Under Art. 33(3) and (4) the dispute shall be submitted to "impartial fact-finding" where the parties are unable to resolve the matter through diplomatic means. A close reading of this provision suggests that the procedure is more akin to compulsory conciliation, rather than open-ended fact-finding. Under Art. 33(8):

The Commission shall adopt its report by a majority vote, unless it is a single-member Commission, and shall submit that report to the Parties concerned setting forth its findings and the reasons therefore and such recommendation as it deems appropriate for an equitable solution of the dispute, which the Parties concerned shall consider in good faith.

*Id.* (emphasis added).

151. See *id.* art. 33(1). In the commentary, the ILC explained that the procedure set forth "is to facilitate the resolution of the dispute through

fact-finding mechanism, upon closer scrutiny, resembles compulsory conciliation, since the provision requires that the fact-finding commission make "such recommendation as it deems appropriate for an equitable solution of the dispute."<sup>152</sup> While a request for fact-finding can be made by any of the parties, recourse to mediation, conciliation, arbitration, or adjudication requires the consent of all the parties concerned. Despite the fact that the UNWC's fact-finding mechanism has not yet been tested in watercourse disputes, it appears well suited to the particularities of water-related disputes,<sup>153</sup> as demonstrated by the substantial domestic practice in India and the United States, which each have a long history of interstate water controversies.<sup>154</sup> Although dispute settlement between states is different in many respects from intrastate disputes, i.e., at the nation-state level within federal states, there is much to be learned from the practice of national courts, including, for example, the use of Special Masters.<sup>155</sup> In most instances, resolving disputes over water require multidisciplinary expertise, including, inter alia, hydrology, economics, water engineering, and so forth, as was the case in most of the U.S. Supreme Court decisions.

In Europe, two different systems have been created to prevent disputes and ensure compliance with the rules related to shared freshwater. The Helsinki Convention and most of the subsequent agreements adopted under that umbrella follow a traditional approach, which commences with negotiations and provides parties their choice of diplomatic means for dispute resolution, including, ultimately, arbitration or adjudication by the International Court of Justice (ICJ).<sup>156</sup> The most recent international water case in Europe

the objective knowledge of the facts. The information to be gathered is intended to permit the States concerned to resolve the dispute in an amicable and expeditious manner and to prevent the dispute from escalating." Fact-finding as a means of conflict resolution has received considerable attention by states. For example, the U.N. General Assembly has adopted a "Declaration on Fact-finding by the United Nations in the Field of the Maintenance of International Peace and Security," in which it defines fact-finding to mean "acquiring detailed knowledge about the factual circumstances of any dispute or situation." U.N. Doc. A/RES/46/59 (1991), available at <http://www.un.org/documents/ga/res/46/a46r059.htm> (last visited Feb. 27, 2006).

152. UNWC, *supra* note 2, art. 33(8).

153. The work builds on the approach adopted by the International Law Association (ILA) in the 1966 Helsinki Rules. See *supra* note 54. See also SLAVKO BOGDANOVIC, *INTERNATIONAL LAW OF WATER RESOURCES—CONTRIBUTION OF THE INTERNATIONAL LAW ASSOCIATION 130-46* (Kluwer Law Int'l 2001). The ILA model provides firstly for negotiations (Article XXX), then referral to a joint agency for reporting (Article XXXI), next to good offices or mediation (Article XXXII), then to a commission of inquiry or an ad hoc conciliation commission "which shall endeavour to find a solution, likely to be accepted by the States concerned" (Article XXXIII), failing which the recommendation is for submission of the dispute to an ad hoc or permanent arbitral tribunal (Article XXXIV). The ILA included an Annex to the Helsinki Rules entitled, "Model Rules for the Constitution of the Conciliation Commission for the Settlement of a Dispute."

154. See GEORGE W. SHERK, *DIVIDING THE WATERS: THE RESOLUTION OF INTERSTATE WATER CONFLICTS IN THE UNITED STATES* (Kluwer Law Int'l 2000).

155. *Id.* The practice under Article 33 of the UNWC, Fact-Finding, might follow the practice of the Special Masters, a practice used extensively in many water-related cases in the United States.

156. The Helsinki Convention's provision on "Settlement of Disputes" provides:

If a dispute arises between two or more Parties about the interpretation or application of this Convention, they shall seek



concerned, not surprisingly, the Danube River. The dispute has yet to be finally resolved despite the ICJ's 1997 decision on the matter.<sup>157</sup> Article 16 of the Rhine Convention, concluded under the umbrella of the Helsinki Convention, establishes negotiation as the primary means of settlement.<sup>158</sup> The rest of the provision, however, reveals a very heavy reliance on arbitration as the main and ultimate resort for dispute settlement, consistent with Article 22 of the Helsinki Convention.

Under the EU WFD, consistent with EU practice, the European Court of Justice deals with all matters related to the possible infringement of EU legislation and, thus, considers water-related disputes after receiving an initial report by the appropriate EU Commission. There is a body of case law relating to the implementation of water-related directives preceding the WFD,<sup>159</sup> but it is too early to analyze the cases decided under the newly adopted WFD.

Water dispute avoidance/dispute resolution measures also involve mechanisms related to monitoring compliance and ensuring public participation. While there are a number of reasons why states have not universally endorsed a formal compliance framework,<sup>160</sup> new developments in Europe under the Helsinki Convention offer insight into how a regional compliance system might be established.<sup>161</sup> The European approach recognizes expressly the importance of

a solution by negotiation or by any other means of dispute settlement acceptable to the parties to the dispute. When signing, ratifying, accepting, approving or acceding to this Convention, or at any time thereafter, a Party may declare in writing to the Depositary that, for a dispute not resolved in accordance with paragraph 1 of this article, it accepts one or both of the following means of dispute settlement as compulsory in relation to any Party accepting the same obligation: (a) Submission of the dispute to the International Court of Justice; (b) Arbitration in accordance with the procedure set out in annex IV. If the parties to the dispute have accepted both means of dispute settlement referred to in paragraph 2 of this article, the dispute may be submitted only to the International Court of Justice, unless the parties agree otherwise.

Helsinki Convention, *supra* note 4, art. 22.

157. The Gabčíkovo-Nagymaros case (Hungary/Slovakia), General List No. 92, (1997), *reprinted in* 37 I.L.M. 162 (1998).

158. The Rhine Convention's "Settlement of Disputes" provision provides:

Should disputes arise between Contracting Parties on the issue of the interpretation or application of this Convention, the parties concerned will strive for a solution by means of negotiations or any other possibility of arbitration acceptable to them.

If it is not possible to settle the dispute by this means and provided the parties to the dispute do not decide otherwise, arbitration proceedings according to the annexes to this Convention which are part of this Convention are carried out upon the demand of one of the parties to the dispute.

Rhine Convention, *supra* note 71, art. 16.

159. See, for example, a recent case brought by the European Commission against Ireland for its alleged failure to transpose EU Directive 76/464/EEC on pollution caused by dangerous substances discharged into the aquatic environment of the EC. *Commission v. Ireland*, No. C-282/02 (ECJ June 2, 2005). The case was reviewed in 16 J. WATER L. 95 (2005).

160. See also Wouters, *supra* note 140.

161. The UNECE continues to monitor compliance and has established a legal board to assist in these efforts. See UNECE, Report of the Third Meeting of the Parties, Addendum, U.N. Doc. ECE/MP.WAT/15/Add.1 (2004), available at <http://www.unece.org/env/documents/2004/wat/ece.mp.wat.15.e.add1.pdf> (last visited Feb. 27, 2006). See also UNECE, *Legal Board*, at [http://www.unece.org/env/water/meetings/legal\\_board/legal\\_board.htm](http://www.unece.org/env/water/meetings/legal_board/legal_board.htm) (last visited Feb. 27, 2006).

the involvement of civil society to assist with monitoring compliance. The Helsinki Convention provided the platform for the adoption of two important documents in this respect: the London Protocol on Water and Health,<sup>162</sup> and the Aarhus Convention on Public Participation.<sup>163</sup> Each of these instruments expressly provides for the involvement of civil society and the monitoring of compliance<sup>164</sup> of each respective treaty, a rather innovative approach that has been pioneered in Europe.<sup>165</sup> These two agreements provide models of the most advanced systems for monitoring the compliance of water-related treaties at the regional level, with a consequent strong engagement of civil society across Europe.<sup>166</sup>

The EU WFD builds upon this approach, expressly requiring "the active involvement of all interested parties in the implementation" of the Directive. This objective must be transposed into national legislation across EU Member States,<sup>167</sup> an obligation that has attracted controversy and

162. See London Protocol, *supra* note 66.

163. Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, June 25, 1998, entered into force on Oct. 30, 2001, available at <http://www.unece.org/env/pp/treatytext.htm> (last visited Feb. 27, 2006) [hereinafter Aarhus Convention].

164. See UNECE, *Aarhus Convention—Compliance Committee*, at <http://www.unece.org/env/pp/compliance.htm> (last visited Feb. 27, 2006).

165. See London Protocol, *supra* note 66; Aarhus Convention, *supra* note 163, art. 15, which provides:

Parties shall review the compliance of the Parties with the provisions of this Protocol on the basis of the reviews and assessments referred to in article 7. Multilateral arrangements of a non-confrontational, non-judicial and consultative nature for reviewing compliance shall be established by the Parties at their first meeting. These arrangements shall allow for appropriate public involvement.

For progress on implementing this provision, see UNECE, Meeting of the Parties to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes and Meeting of the Signatories to the Protocol on Water and Health to the Convention (Item 5 of the Provisional Agenda), U.N. Doc. MP.WAT/WG.4/2004/2 (Feb. 16, 2004), available at <http://www.unece.org/env/documents/2004/wat/wg.4/mp.wat.wg.4.2004.1.e.pdf> (last visited Feb. 27, 2006).

166. Transboundary Chu-Talas River Project, *News*, at <http://www.talascu.org/index.php?ID=news,22,en> (last visited Feb. 27, 2006) (concerning the third regional stakeholder meeting of the Global Water Partnership for Caucasus and Central Asia on Dec. 8-9, 2005, in Tashkent, Uzbekistan).

167. The WFD's provision on "Public Information and Consultation" provides:

1. Member States shall encourage the active involvement of all interested parties in the implementation of this Directive, in particular in the production, review and updating of the river basin management plans. Member States shall ensure that, for each river basin district, they publish and make available for comments to the public, including users:

- (a) a timetable and work programme for the production of the plan, including a statement of the consultation measures to be taken, at least three years before the beginning of the period to which the plan refers;
- (b) an interim overview of the significant water management issues identified in the river basin, at least two years before the beginning of the period to which the plan refers;
- (c) draft copies of the river basin management plan, at least one year before the beginning of the period to which the plan refers.

On request, access shall be given to background documents and information used for the development of the draft river

posed challenges for national governments, but one that is nonetheless essential for the successful implementation of the regime.<sup>168</sup> A recent meeting on the Directive set forth plans for continuing this implementation process.<sup>169</sup>

## VI. Observations and Conclusions: Europe as a Global Model for Managing Transboundary Water?

Europe is a heterogeneous region with a remarkable range of economic, social, and political traditions and geophysical settings. The legal approach to managing Europe's transboundary waters is consistent with the international rule of "equitable and reasonable use," as codified in the UNWC, adopted in 1997 with the support of 104 states worldwide. This provides a solid foundation to meet the competing demands for water in Europe resulting from economic growth, growing urbanization, reduced water quality, and climate change. As described in the London Protocol:

[I]n the European part of the UNECE region alone, an estimated 120 million people, i.e., one person in seven, do not have access to safe drinking water and adequate sanitation, making them vulnerable to water-related diseases, such as cholera, bacillary dysentery, coli infections, viral hepatitis A and typhoid. Cleaner water and better sanitation could prevent over 30 million cases of water-related disease each year in the region.<sup>170</sup>

The 1992 UNECE Helsinki Convention and the recently adopted EU WFD were developed in response to this range

basin management plan.

2. Member States shall allow at least six months to comment in writing on those documents in order to allow active involvement and consultation.

3. Paragraphs 1 and 2 shall apply equally to updated river basin management plans.

WFD, *supra* note 5, art. 14.

168. See Melvin Woodhouse, *Is Public Participation a Rule of the Law of International Watercourses?*, 43 NAT. RESOURCES J. 137 (2003).

169. COMMON IMPLEMENTATION STRATEGY FOR THE WATER FRAMEWORK DIRECTIVE: ENVIRONMENTAL OBJECTIVES UNDER THE WATER FRAMEWORK DIRECTIVE (2005), available at <http://europa.eu.int/comm/environment/water/water-framework/pdf/objectives.pdf> (last visited Feb. 27, 2006).

The document should be regarded as presenting an informal consensus agreed by the Water Directors of the EU. It does not necessarily represent the official, formal position of any of the partners. It provides:

The Water Framework Directive already provides for a step-wise approach to ensure that the achievement of the objectives and the related benefits and costs are being addressed in the management cycle. It follows . . . that there is a sequence of steps, which, for the first river basin management plan could be summarised as follows:

**Step 1 (2004-2006):** EU harmonisation of criteria for status assessment on the basis of common methodologies and approaches.

**Step 2 (2005-2009):** Evaluation of the most cost-effective measures and identification of potential socio-economic impacts including a public consultation of these issues.

**Step 3 (2007 onwards):** Monitoring of water quality.

**Step 4 (2008-2009):** The step 2 process culminate in setting objectives including, if necessary and appropriate, application of exemptions following public participation.

The process does not stop after the first planning cycle for preparing a river basin management plan but will continue in the second and third cycle.

*Id.* at 5-6.

170. See *Protocol on Water and Health*, *supra* note 66.

of problems. The former agreement has spawned a series of basin-specific treaties, as well as two protocols,<sup>171</sup> that build upon the Helsinki framework; the latter has required EU Member States to adopt measures at the national level to meet the goal of achieving "good water quality" across the EU. Despite these regional instruments, however, severe challenges remain.

Europe, and the newly expanding EU, comprises a diverse spectrum of politics and nation states with a broad range of human and financial resources. The challenge is to effectively mobilize these resources so as to ensure equitable access to water and sanitation services across Europe. The "water challenge,"<sup>172</sup> however, extends beyond Europe, and given the interconnectedness of environmental matters, this really is a global matter as severe water scarcity in one part of the world has direct consequences across the globe. A recent media report suggested a new era of "water wars" arising out of scarcity linked with the impact of climate change.<sup>173</sup> Regional insecurity has direct consequences on regional prosperity. Issues related to poverty reduction are linked directly to a national government's ability (or inability) to ensure its citizens have access to drinking water and sanitary services. Support for developing countries from multilateral and bilateral development agencies appears to be directly linked to how these countries plan to meet their MDGs, and access to clean water and sanitation is a fundamental cornerstone in this endeavor. The EU has consolidated its support in this respect through the creation of the EU Water Initiative<sup>174</sup> and EU

171. See, e.g., London Protocol, *supra* note 66, and the Protocol on Civil Liability, *supra* note 67.

172. The EU Water Initiative is based on its vision of the "water challenge," described as:

Freshwater is a finite and precious resource essential for sustaining life and human development, for undertaking economically productive activity, and for the environment. Water is central to sustainable development and solving water problems means progress across all pillars of sustainable development: economic, social and environmental. Also, as a regular supply of drinking water is one of the most basic humanitarian needs, it becomes a daily factor for survival during a humanitarian crisis. No strategy for the reduction of poverty can ignore people's vital requirements for water, and sustainable development policies must address the need for equitable and sustainable management of water resources in the interests of society as a whole. The global water crisis threatens lives, sustainable development and even peace and security.

EU Water Initiative, *The ACP-EU Water Facility*, at <http://www.euwi.net/index.php?main=1&sub=7#219> (last visited Mar. 2, 2006).

173. See Ben Russell & Nigel Morris, *Armed Forces Are Put on Standby to Tackle Threat of Wars Over Water*, THE INDEPENDENT, Feb. 28, 2006, available at <http://news.independent.co.uk/environment/article348196.ece> (last visited Mar. 2, 2006).

174. The EU Water Initiative was launched in 2002 at the Johannesburg Summit and is aimed at supporting meeting the MDGs.

The European Union Water Initiative, launched at the World Summit on Sustainable Development in Johannesburg in 2002, is an expression of the collective will of the European Union to work in an innovative manner to focus on water and sanitation, a key development issue closely linked to achievement of nearly all the Millennium Development Goals. The time has come to increase our commitment into this most important challenge for development.

KEYNOTE SPEECH BY U.K. PRESIDENCY, EU WATER INITIATIVE MULTI-STAKEHOLDER FORUM AT STOCKHOLM WATER WEEK 2005

Water Facility,<sup>175</sup> which seek to provide a coherent program of international support to states around the world. In the European context, the UNECE has recently reported on the status of achievement of the MDGs across Europe.<sup>176</sup> These efforts should be monitored closely, since early reports on the success of European support in the water sector around the world have not been positive and called for increased focus and communication.<sup>177</sup>

At a bilateral level, the United Kingdom now appears to have returned “water” to its development aid agenda, despite several years of hiatus when distractions deviated from the coherence developed in its former policy described in *Addressing the World’s Water Crisis*.<sup>178</sup> Over the past years, Hilary Benn, the U.K. Secretary of State for International Development, has reinvigorated the United Kingdom’s focus on the importance of effective water resources management as a vehicle for poverty reduction in developing countries—sustainable access to water is directly linked to economic prosperity, with demonstrable health, education and security-related benefits. As one Ethiopian declared publicly, “Each \$1 investment in water in Ethiopia yields \$20 benefits across sectors.”<sup>179</sup> However, development objectives are driven by national governments, and it is at this level that “water” must be made a priority policy objective. Multilateral and bilateral donor agencies will support initiatives that are in line with the MDGs, but this must be driven by local leadership, empowered with knowledge and capacity. As Benn asserts, “only developing countries—led by their own people and their own governments—can ultimately make the decisive changes that are needed to fight poverty.”<sup>180</sup> It is a position that finds favor with other bilateral donors, and most significantly, with one of the largest multilateral donors—the World Bank.<sup>181</sup> That effective wa-

ter resources management around the world requires a connected-up scheme of solid capacity-development, with a focus on facilitating the development of local “water champions,” is an observation shared by many—experts and stakeholders alike.

Managing the world’s shared water resources, especially in the context of climate change, growing populations, and demographic movements to urbanization, requires innovative solutions. An integral part of the response must be transparent, implementable legal regimes, and yet lawyers are not usually part of the water resources management reform team.<sup>182</sup> The experience from Europe demonstrated in this study through an examination of the most important regional instruments—the UNECE Helsinki Convention and the EU WFD—illustrates the importance and operational relevance and effectiveness of regional legal frameworks. It shows an approach based on basinwide management and founded on the rule of “equitable and reasonable utilisation.” The European regional focus is on the sustainable management of water resources through ecosystem protection and pollution prevention. Whether this approach can be transposed with success in developing countries around the world remains to be seen and should depend upon local needs and demands. From a water law perspective, however, the issues necessary to be addressed in a successful transboundary watercourses legal regime—matters related to scope, substantive rules, procedural rules, institutional mechanisms, and dispute avoidance/compliance—are well embedded in the European system and should be studied more closely in the international context. The collective commitment by the EU to support developing countries in their drive to meet the MDGs, including improved access to drinking water and sanitation, is to be commended. Importantly, the legal regimes that govern Europe’s transboundary watercourses offer significant lessons that should be considered in meeting the global “water challenge.”

(2005), available at <http://www.euwi.net/> (last visited Mar. 6, 2006).

175. The EU Water Facility was established in 2004. “This Facility, targeting developing countries in Africa, the Caribbean and the Pacific, is a response to the need to catalyse additional funding and to work directly with those most affected by shortages of water and the absence of sanitation.” Europa, *ACP-EU Water Facility: In Detail*, at [http://europa.eu.int/comm/europeaid/projects/water/details\\_en.htm](http://europa.eu.int/comm/europeaid/projects/water/details_en.htm) (last visited Feb. 28, 2006).
176. See UNECE, *ACHIEVING THE MILLENNIUM DEVELOPMENT GOALS IN THE UNECE REGION*, U.N. Doc. E/CE/1438 (2006), available at [http://www.unece.org/commission/2006/E\\_ECE\\_1438e.pdf](http://www.unece.org/commission/2006/E_ECE_1438e.pdf) (last visited Feb. 28, 2006).
177. See Europa, *Review of EU Water Initiative—Research Component, Review of International S&T Cooperation Projects Addressing Integrated Water Resources Management—Lessons to Be Learnt*, at [http://europa.eu.int/comm/research/water-initiative/iwrm\\_review\\_en.html](http://europa.eu.int/comm/research/water-initiative/iwrm_review_en.html) (last visited Feb. 28, 2006).
178. DEPARTMENT FOR INTERNATIONAL DEVELOPMENT (DFID), *ADDRESSING THE WORLD’S WATER CRISIS: HEALTHIER AND MORE PRODUCTIVE LIVES FOR POOR PEOPLE* (2001), available at <http://www.dfid.gov.uk/pubs/files/tspwater.pdf> (last visited Feb. 27, 2006).
179. Comments in plenary session by Paulos Semeles, DFID Ethiopia, DFID External Water Forum, Royal Geographical Society, London, England, Feb. 7, 2006.
180. Hilary Benn, Speech to the Royal African Society and School of Oriental and African Studies, London University, “Political Governance, Corruption, and the Role of Aid” (Feb. 2, 2006), available at <http://www.dfid.gov.uk/news/files/Speeches/wp2006-speeches/governance020206.asp> (last visited Feb. 27, 2006).
181. Paul Wolfowitz, President of the World Bank, recently confirmed that Africa is a priority area:

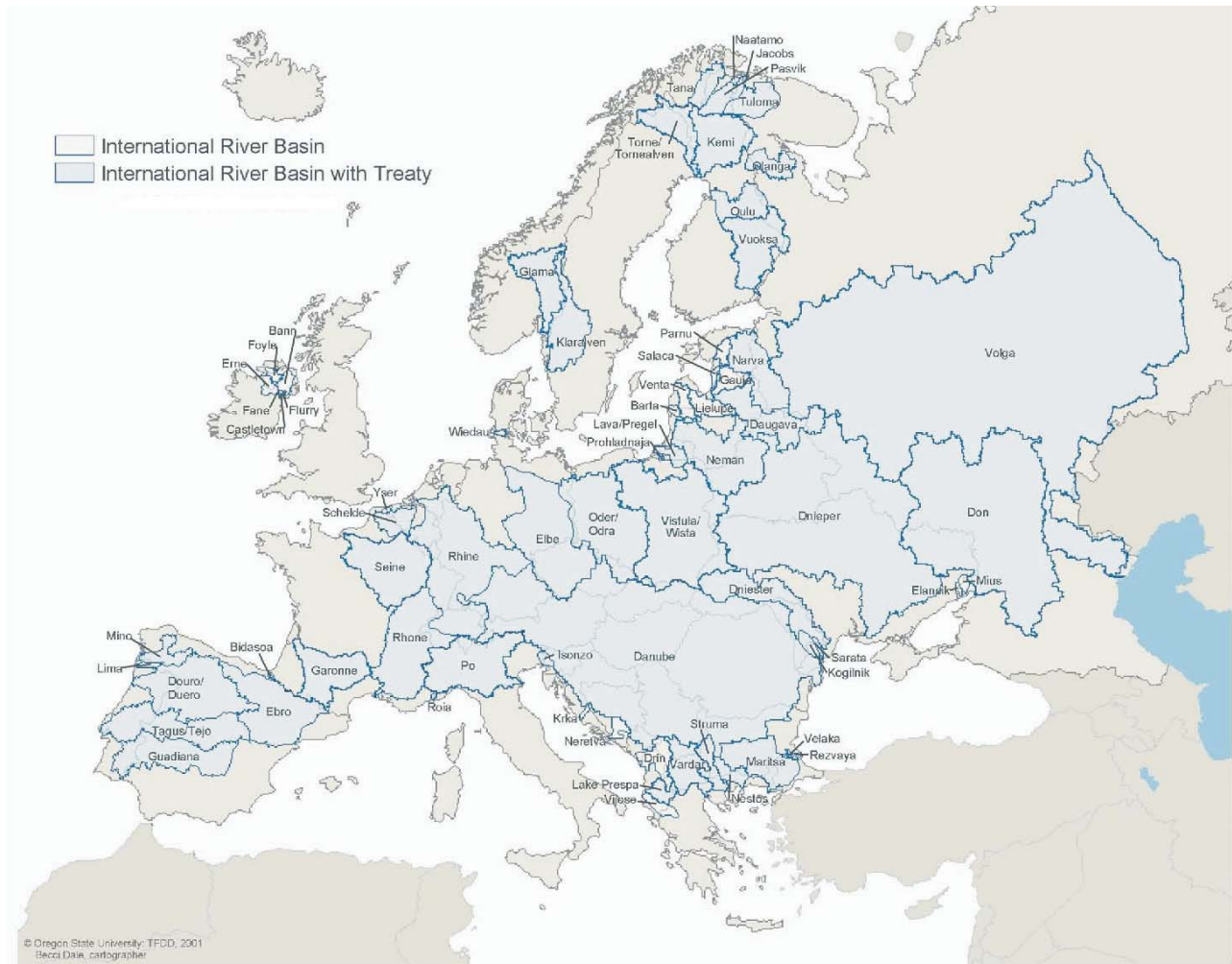
Well, I’m even more convinced than when I started that Africa has to be the first priority for the bank and I guess when I say Africa we mean, of course, sub-Saharan Africa. It is 600 million people that have been slipping into deeper poverty. There are 300 million of them roughly living on less than a dollar a day and eager to work hard to get out of that poverty trap and increasingly around Africa I think we see governments that are prepared to step up to their responsibilities and it puts an even greater responsibility on the developed world and on development institutions like my own to make sure that we deliver the resources that will enable them to do that. It’s, I think a potentially critical turning point for the sub-continent and so that has to be the first priority.

The World Bank, *Media Roundtable With World Bank President Paul Wolfowitz in Brussels, 14 November 2005*, at <http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/ORGANIZATION/EXTOFFICEPRESIDENT/0,,contentMDK:20723965~menuPK:64343277~pagePK:51174171~piPK:64258873~theSitePK:1014541,00.html> (last visited Feb. 28, 2006).

182. Water lawyers need to convey the relevance and role of (water) law in the development of effective water management plans, to make water law more accessible to those that need it most, and to learn to engage in interdisciplinary teams in research and projects. We need a new generation of water champions, with water law an integral part of the package.



**Appendix One: Map of Europe's Water Basins<sup>183</sup>**



183. U.N. ENVIRONMENT PROGRAMME & OREGON STATE UNIVERSITY, *ATLAS OF INTERNATIONAL FRESHWATER AGREEMENTS 77* (2002), available at [http://www.transboundarywaters.orst.edu/publications/atlas/atlas\\_pdf/4\\_Treaties\\_europe.pdf](http://www.transboundarywaters.orst.edu/publications/atlas/atlas_pdf/4_Treaties_europe.pdf) (last visited Feb. 25, 2006).