

A Glimpse into International Regimes Governing the Use of Transboundary Freshwater Resources

Theodore Okonkwo LL.B(Hons), BL;LL.M, Ph.D (Environmental Law)
Senior Lecturer and Head of Department, Department of Public Law, Faculty of Law, University of Port-Harcourt, Port-Harcourt, Nigeria

Abstract

This article discusses the legal and institutional frameworks that apply to transboundary freshwater resources. Water has increasingly become one of the most critical environmental concerns of the twenty-first century. The quantum leap in global populations and economies has created enormous environmental change that is presently threatening the quantity and quality of freshwater resources. To address this concern, the international community has over the years designed, negotiated and ratified treaties and rules for the management of freshwater resources in international river basins as a necessary step to overcome some of the conflicts related to international waters. This article provides a general glimpse into transboundary freshwater treaties and rules governing the use of water resources, with a focus on major international regional agreements and non-treaty instruments; the institutional framework for the management of transboundary water resources and international water law Cases. The development of transboundary freshwater treaties and rules governing the use of water resources by the international community is bound to have a clear impact on the regime. These treaties and rules help to address the environmental concerns in transboundary freshwater management, and represent significant efforts in this long and difficult process of resolving water-related international challenges.

Keywords: International waters, river basins, transboundary freshwater treaties, water resources, shared river management, international water law, dispute resolution

I. Introduction

The term “transboundary waters” generally refers to sources of freshwater that are shared among multiple user groups with diverse values and various purposes associated with water use, and which water body crosses boundaries, be they those of economic sectors, legal jurisdictions, or political interests.¹ From the stakeholders such as individual farmers, and environmental advocates, to urban versus rural uses, to nations that straddle international waterways, all freshwater is transboundary in nature, as well as important to society at local, national, regional and international scales. Transboundary waters comprise certain features that make their management complicated, foremost of which is that they require a more complete understanding of the political, cultural, and social aspects of water, and that integrated management depends on extremely intricate awareness of the decision making process.²

Approximately, the world’s 263 transboundary lake and river basins cover³ nearly half of the Earth’s land surface which cross or create international political boundaries.⁴ A total of 145 nations including territories within international basins and 21 countries lie entirely within international basins. While most of the basins are shared just between two countries, there are many basins where this number is much higher. There are 13 basins worldwide that are shared between 5 and 8 riparian nations.⁵ All transboundary water bodies create hydrological, social and economic interdependencies between societies. They are also vital for economic development, reducing poverty and contributing to the attainment of sustainable development goals.⁶

As water quality diminishes and the quantity available for meeting increasing demands reduces, over time, conflict and competition among water users escalates. This is because tensions rise where water is scarce. However, this state of affairs becomes more pronounced in river basins that cross political boundaries, especially as interventions at one side of the border have real impact on the other side of the border. Indeed,

¹ The Universities Partnership for Transboundary Waters, ‘Frequently Asked Questions’, available at: <http://waterpartners.geo.orst.edu/faq.html>. For the purpose of this article, the term “transboundary waters” refers to transboundary rivers, lakes, inland water as a whole and aquifers. Here, it does not include open oceans, territorial seas and coastal water.

² The Universities Partnership for Transboundary Waters FAQ. Oregon 2016.

³ UN Water Statistics – Water Resources. http://www.unwater.org/statistics_reshtml accessed on May 29, 2016.

⁴ UNEP, “The World’s International Freshwater Agreements: Historical Developments and Future Opportunities,” p. 1 in *Atlas of International Freshwater Agreements (2002)*.

⁵ Five basins, the Congo, Niger, Nile, Rhine and Zambezi, are shared between 9 and 11 countries. The river that flows through the most nations is the Danube, which travels within the territory of 18 nations. About 2 billion people globally depend on groundwater, which includes approximately 300 transboundary aquifer systems.

⁶ United Nations. *Transboundary Waters: Sharing Benefits, Sharing Responsibilities*. (Thematic Paper, UN Water 2005-2015, Zaragoza, Spain, UN-LDFA.

Africa is replete with conflicts relating to the use of transboundary waters that threaten both the available and the benefit to be derived from the use of the natural resource.¹ In this light, Kofi Annan² has posited that:

Fierce national competition over water resources has prompted fears that water issues contain the seeds of violent conflict. If all the world's peoples work together, a secure and sustainable water future can be ours.

However, experience shows that in many cases, rather than causing "violent conflict," the need for water sharing can generate cooperation among nations,³ through cooperation in the management of this indispensable natural resource. Although, conflicts over water resources date back thousands of years, available records show that water conflicts can be handled diplomatically.⁴ Nations are developing ways to share freshwater resources,⁵ and designing, negotiating and ratifying global treaties and rules governing the use of water resources. Hundreds of regional treaties and agreements also exist between and among nations to tackle issues ranging from acceptable water quality and quantity to setting of national borders. Many of these treaties and rules contain mechanisms for conflict resolution with many establishing international commissions for water resource management to ensure the sustainable use of the resource. And it is the major aim of this paper to appraise these efforts that are broadly focused on guaranteeing the sustainable and peaceable use of transboundary waters for the benefit of mankind.

II. The World's Water: United Nations (UN) Initiatives

UN-Water is the UN's inter-agency mechanism for all its agencies, departments and programs with functional responsibility in water-related issues, and supports member states in their efforts to achieve water and sanitation related goals and targets.⁶ Transboundary water issues have been identified by UN-Water as among the priority areas that requires joint action and this 'joint action' is evident in the UN-wide effort to carry out initiatives that would help to raise the issue of proper management of international transboundary freshwater. A key concern facing nations today is how to ensure that both people and the natural environment have adequate freshwater to sustain and nourish their existence. It is because of this legitimate expectation on the part of nation states that the UN have responded to the growing legal issues concerning transboundary freshwater resources, and this it has done through treaties and rules to strengthen transboundary freshwater governance and ensuring environmental sustainability of these vital resources.

The UN has also created a global platform for basin organizations as well as other relevant actors to work together towards stronger governance and management of transboundary freshwater bodies through the adequate integration of environmental considerations and responses to challenges faced by freshwater basins. The UN through its UNEP's Division of Environmental Law and Conventions has initiated actions that focus on the establishment of a regular platform for basin organizations to debate and work towards improving the governance and management of transboundary freshwater resources.

In September, 2010, UN-Water established a Thematic Priority Area (TPA) on Water Quality to enhance inter-agency collaboration and support UN member states in addressing global water quality challenges. The aim was also to monitor and report on the state of water quality, identify emerging issues and propose relevant responses. The envisaged scope of work of the TPA on Water Quality includes: the development of international water quality guidelines for aquatic ecosystems; improving global water quality monitoring and data collection; promoting legislation, policies, and regulations on water quality; supporting research, education and capacity building on water quality; and raising global awareness about water quality. The UN had declared the year 2009 the "World Water Day 2009: Shared Waters, Shared Opportunities." The focus was placed on transboundary waters and on the fact that nurturing the opportunities for cooperation in transboundary water management can help build mutual respect, understanding and trust among countries and promote peace, security and sustainable economic growth.

Recently in 1997, the UN initiated the Convention on the Law of the Non-Navigational Uses of International Watercourses, which is the only treaty governing shared freshwater resources that is of universal applicability.⁷ It is a framework convention, in the sense that it provides a framework of principles and rules that

¹ J Otieno, "Understanding Africa's Water Wars", *Africa Review*, 6 November, 2013, available at: <http://www.africareview.com/Special-Reports/Understanding-the-water-wars-in-Africa/-/979182/2062968/-/13c54d5z/-/index.html>.

² Former UN Secretary-General.

³ United Nations Department of Economic and Social Affairs (UNDESA). *International Decade for Action, 'Water for Life 2005-2015.'*

⁴ The last 50 years have seen only 37 acute disputes involving violence, compared to 150 treaties that have been signed. Nations value these agreements because they make international relations over water more stable and predictable.

⁵ D. C. McKinney. *Transboundary Water Issues*. (Graduate Class: CE397, 1 June, 2011).

⁶ See UN-Water website: www.unwater.org/.

⁷ Convention on the Law of the Non-navigational Users of International Watercourses was adopted by the General Assembly of the United Nations on 21, May, 1997.

may be applied and adjusted to suit the peculiar characteristics of particular international watercourses. Some key guiding principles set out in the document include: the equitable and reasonable utilization of international watercourses; the application of appropriate measures to prevent harm to other states sharing an international watercourse; and the principle of prior notification of planned measures.

Following this, in February 2011, the UN General Assembly proclaimed 2013 the “International Year of Water Cooperation”. In the same year, 11 December precisely, the UN General Assembly adopted a Resolution on the Law of Transboundary Aquifers.¹ The Resolution encourages states ‘to make appropriate bilateral or regional arrangements for the proper management of their transboundary aquifers, taking into account the provision of these draft articles,’ which are annexed to the Resolution. These provisions include cooperation among states to prevent, reduce and control pollution of shared aquifers. In view of the importance of these invisible resources, States are invited to consider these draft articles as a basis for the elaboration of a Convention. Indeed, the Law of Transboundary Aquifers is a concrete step forward towards the peaceful sharing of ground water resources.

We have options to prevent the water crisis from turning into a catastrophe. Now, we need the moral courage and political will to act and we need reliable data and expert analysis to guide our reform efforts.²

III. International Legal Framework

The history of international water treaties dates as far back as 2500 B.C. when the two Sumerian city-states of Lagash and Umma crafted an agreement ending a water dispute along the Tigris River often said to be the first treaty of any kind.³ Between that period and now, a large body of water treaties has emerged.⁴ The comity of nations has recognized the importance of multilateral legal frameworks in effectively managing the use of transboundary waters. This realization has led to the conclusion of several treaties at various levels on the use, development and protection of transboundary watercourses and related ecosystems. The majority of these deal with navigation and boundary demarcation. However, the focus of negotiations in treaty-making in the last century has, to a large extent, shifted away from navigational issues towards the use, development, protection and conservation of water resources. This shift is premised on the notion that a sound and robust legal framework is essential for stable and reliable cooperation in sharing responsibilities for transboundary waters.

At the global level, the Convention and Statute on the Regime of Navigable Waterways of International Concern,⁵ a multilateral treaty that was concluded at Barcelona in 20 April, 1921, was negotiated for the purpose to ensure freedom of navigation in waterways⁶ which bear international significance.⁷ Also, there is the Indus Waters Treaty, which is a water distribution treaty between India and Pakistan, brokered by the World Bank, signed in Karachi on 19 September, 1960.⁸ There are also the 1978 Great Lakes Water Quality Agreement,⁹ the 1991 Pakistan Water Apportionment Accord,¹⁰ the 1995, Agreement on the Cooperation or the Sustainable Development of the Mekong River Basin,¹¹ the 1995 Protocol on Shared Watercourse Systems in the Southern African Development Community Region,¹² the 1996 Mahakali and Ganges treaties¹³ and the 2003 African

¹ The 63rd session of the UN General Assembly Resolution A/RS/63/124 on the Law of Transboundary Aquifers.

² Robert Glennon, Foreword to *The World's Water*, Volume 7, (Washington, D.C: 2011).

³ Meredith A. G. and Aaron T.W. (2014). “The World’s International Freshwater Agreements.” Oregon State University.

⁴ According to the Food and Agricultural Organization, more than 3,600 treaties related to international water resources have been drawn up since 805 A.D.

⁵ Barcelona, April 20, 1921, 7 UNTS 36.

⁶ Ports, rivers, and artificial canals.

⁷ It was registered in *League of Nations Treaty Series*, on 8 October, 1922. The Convention is still in force.

⁸ Indus Case Study. Adapted from Beach, H.L., Hammer, J., Hewitt, J.J., Kaufman E., Kurki, A., Oppenheimer, J.A. and Wolf, A. T. (2000). *Transboundary Freshwater Dispute Resolution: Theory and Practice, and Annotated References*. United Nations University Press, 19 Ramsar, February 2, 1971, 996 UNTS, 245.

⁹ United States – Canada, Nov. 22, 1978, [1978] – U.S.T. – T.I.A.S. No. The Great Lakes Water Quality Agreement (GLWQA) was first signed in 1972 to coordinate the actions of Canada and the United States. The purpose of the GLWQA is “to restore and maintain the chemical, physical, and biological integrity of the Waters of the Great Lakes. The Great Lakes Water Quality Agreement was amended in 2012 to better identify and manage current environmental issues, and prevent emerging environmental issues from affecting the waters of the Great Lakes, while upholding and modernizing commitments made in previous Agreements.

¹⁰ Pakistan Water Apportionment Accord for resolving inter-provincial water conflicts, policy issues and options.

¹¹ Mekong River Commission, formed April 5, 1995, the legal status is 1995 Mekong Agreement, an inter-governmental body concerned with the Mekong River Basin and charged to promote and coordinate sustainable management and development of water and related resources for the countries’ mutual benefit.

¹² Revised in 2000, the first ever-sectoral legal instrument in the Southern African Development Community (SADC), greatly influenced by various international water law instruments, such as the Helsinki rules, the Dublin Principles and Agenda 21. The SADC Protocol on Shared Watercourse Systems covers all uses of surface water, including agricultural, domestic, industrial, and navigational uses.

¹³ 1996 Ganges Water Treaty between Nepal, India and Bangladesh.

Convention for the Conservation of Nature and Natural Resources.¹

A convention on Wetlands of International Importance Especially as Waterfowl Habitat,² was agreed in 1971, for the conservation and sustainable use of wetlands. The Convention's mission is: "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world". The Convention has a broad definition of 'wetlands' in its Article 1; it includes all lakes and rivers, underground aquifers, swamps and marshes, wet grasslands, peatlands, oases, estuaries deltas and tidal flats, mangroves, and other coastal areas, coral reefs, and all human-made sites such as fish ponds, rice paddies, reservoirs and salt pans. The equitable and sustainable allocation and management of water are crucial for maintaining the ecological function of freshwater water ecosystems. These functions sustain the significant services that these ecosystems provide to support human well-being. There are other multilateral environmental agreements, such as the UN Convention to Combat Desertification and its Sub-regional Action Programmes, and the UN Convention on Biological Diversity which may not on their own be majorly concerned with transboundary water issues, but help provide vital support framework for cooperation in this regards .

In this context, this article takes a brief look at the role of the UN Convention on the Law of the Non-Navigational Uses of International Watercourses (UN Watercourses Convention)³ and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE Watercourses Convention),⁴ which address water issues at the global and regional levels.

(i) The UN Watercourses Convention

The UN Watercourses Convention is a global and flexible framework instrument prepared and negotiated under the aegis of the UN to govern the use, management and protection of international watercourses. The Convention was adopted by an overwhelming majority and under the sponsorship of 38 states at the UN General Assembly in May 1997. Importantly, it is open for accession by all states and regional economic organizations. Article 36 of the Convention requires the deposit of 35 instruments of ratification or accession for its entry into force. The Convention's goal is to reinforce inter-state cooperation at the basin level, significantly, improving global water governance and enhancing the legal regime for conserving and sustainably using water resources.

The UN Watercourses Convention aims to deal with "the problems affecting many international watercourses resulting from, among other things, increasing demands and pollution."⁵ The Convention "applies to uses of international watercourses and of their waters for purposes other than navigation and to measures of protection, preservation and management related to the uses of those watercourses and their waters."⁶ Other key issues under the Convention are water allocation, water protection, preservation, and management, including pollution control. The UN Watercourses Convention applies to all non-navigational uses of international watercourses,⁷ including environmental ones. The Convention determines that, "in the absence of agreement or custom to the contrary, no use of an international watercourse enjoys inherent priority over other uses."⁸ Therefore, the UN Watercourses Convention considers instream water uses on equal footing as other types of water utilization.⁹ The scope of the Convention is further determined by its definition of a *watercourse* as "a system of surface waters and ground-waters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus."¹⁰ This term explains the nature of watercourses from the point of view of hydrological cycle, looking at international watercourses or river systems as an ecological whole, made up of interlinked functioning parts, such as the main river and its tributaries, aquifers, lakes and even glaciers. Thus, the Convention recognizes that the intimate relationship among those different components of a hydrological system requires that States utilize and manage international watercourses as a "unitary whole."

The UN Watercourses Convention also recognizes the need for ecosystem approach in the utilization,

¹ Revised on July 11, 2003, was adopted at the Second Summit of the African Union ("Maputo Convention"). The objectives as contained in Article II of the Convention are: to enhance environmental protection; to foster the conservation and sustainable use of natural resources; and to harmonize and coordinate policies in these fields with a view to achieving ecologically rational, economically sound and socially acceptable development policies and programmes.

² 11 I.L.M. 963 (1972)

³ UN General Assembly, May 21, 1997, 36 ILM 700; UN Doc/A/51/869.

⁴ Helsinki, 1992, 31 ILM 1312, UN E/ECE/1267.

⁵ Paragraph 4 of its preamble.

⁶ Article 1(1).

⁷ Nevertheless, navigational uses of international watercourses are within the scope of the Convention, "in so far as other uses affect navigation or are affected by navigation." UN Watercourses Convention, Article 1(2).

⁸ Article 10(1).

⁹ Brels, S., Coaters, D. and Loures, F. (2008). *Transboundary Water Resources Management: The Role of International Watercourse Agreements in Agreements in Implementation of the CBD*. CBD Technical Series No. 40, 48 pages. Secretariat of the Convention on Biological Diversity, Montreal, Canada.

¹⁰ Article 2(a).

management, and protection of international watercourses, especially from a sustainable development¹ perspective that supports the “promotion of the optimal and sustainable utilization [of the resource] thereof for present and future generations.”² It codifies the general responsibility for watercourse States to “individually and, where appropriate, jointly, protect and preserve the ecosystems of international watercourses.”³ The Convention further requires the reasonable and equitable utilization of international watercourses to be consistent with the adequate protection of those watercourses.⁴ By this provision, it becomes obligatory that watercourse States must consider the natural conditions, transboundary environmental effects and the conservation and protection of water resources, in the promotion and equitable use of shared water resources.⁵ Through the above provisions, the UN Watercourses Convention contains an ecosystem approach, and as a global framework dealing specifically with international water law and policy, it is an enabler of inter-state cooperation on the development and management of international watercourses.

In line with the sustainable development approach, the UN Watercourses Convention explicitly admits “the special situation and needs of developing countries.”⁶ It further requires States to “utilize an international watercourse in an equitable and reasonable manner... 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.”⁷ Thus, the Convention places sustainability concerns at the core of the principle of reasonable and equitable use, which constitutes the Convention’s foundation that guides the application and interpretation of all its provisions.

The regime also codifies the general responsibility of States not to cause significant transboundary harm. It provides that it is the responsibility of States ‘to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.’⁸ It further requires state Parties to “regulate or manage the relevant processes and categories of activities” in cases “where a significant adverse effect on biological diversity has been determined pursuant to Article 7”.⁹ What is more, the Convention obliges states “in utilizing an international watercourse in their territories, [to] take all appropriate measures to prevent the causing of significant harm to other watercourse States.”¹⁰ The same provision continues thus:

Where significant harm nevertheless is caused to another watercourse State, the States whose use cause such harm shall, in the absence of agreement to such use, take all appropriate measures, having due regard for the provisions of articles 5 and 6, in consultation with the affected State, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.¹¹

The UN Watercourses Convention obligates Parties to regulate and manage transboundary water pollution in the following terms:

Watercourse States shall prevent and control the pollution of an international watercourse that may cause significant harm to other watercourse States or to their environment, including harm to human health or safety, to the use of the waters for any beneficial purpose or to the living resources of the watercourse. Watercourse States shall take steps to harmonize their policies in this connection.¹²

The regime further requires States to “prevent the introduction of species, alien or new, into an international watercourse,”¹³ although it did provide for the duties to control or eradicate alien species.¹⁴ The UN Watercourses Convention incorporates a detailed body of procedural rules with obligations of notification and interstate consultation in the case of planned measures, and provides that co-riparian States have obligations to “exchange information and consult each other and, if necessary, negotiate on the possible effects of planned measures on the condition of an international watercourse.”¹⁵ If the planned measures may cause significant

¹ See, World Commission on Environment and Development, “Our Common Future” (1987), UNDOC.A/42/427, Development International Co-operation: Environment (2 Aug. 1987).

² Paragraph 5 of the preamble.

³ Article 20.

⁴ Article 5(1).

⁵ Article 6.

⁶ Paragraph 7 of the preamble.

⁷ Article 5(2).

⁸ Article 3.

⁹ Article 8(1).

¹⁰ Article 7(1).

¹¹ Article 7(2).

¹² Article 21(c).

¹³ Article 22.

¹⁴ However, see Article 20 which deals with the protection and preservation of the ecosystem of international watercourses.

¹⁵ Article 11.

transboundary impact through harmful effects on an international watercourse, the implementing State shall notify the States concerned¹ and this notification must include all the available technical data and information, which includes the outcome of any environmental impact assessment. These rules and principles under the UN Watercourses Convention provide “predictable and pragmatic guidelines” upon “which States can negotiate with one another and draft new or revised watercourse agreements.”

Also, the Convention contains a dispute settlement mechanism which regulates the settlement of disputes that are likely to ensue between co-watercourse States.² The Convention provides that if the Parties involved do not reach an agreement within a period of six months of the initial request for negotiations, any of the States involved has the right to request for the setting up of a fact-finding commission, which shall have powers to investigate and inspect and consult with the parties. At the end, the commission can only formulate recommendations for an equitable resolution of the dispute. The commission’s report has no legal binding force on the Parties, though the Parties are expected to “consider it in good faith” in its Article 33(8).

(ii) The UNECE Water Convention

The UN Economic Commission for Europe Convention on the Protection and Use of Transboundary Watercourses and International Lakes³ (UNECE Water Convention) promotes cooperation on transboundary surface and ground-waters and strengthens their protection and sustainable management. Under the Water Convention, riparian Parties shall, at regular intervals, carry out joint or coordinated assessments of the conditions of transboundary waters and the effectiveness of measures taken to prevent, control and reduce transboundary impacts.⁴ The Water Convention’s main objective is to strengthen measures at the local, national and transboundary levels to protect and ensure the quantity, quality and sustainable use of transboundary water resources – both surface waters and ground-waters. The Convention adopted a holistic approach, hinged on the understanding that water resources is an integral part of the ecosystems, human societies and economies.⁵ The Convention requires States to fulfill certain obligations, from obligating themselves to the general principles to implementing concrete actions which include:

- To prevent, control and reduce adverse transboundary impacts⁶ on the environment, human health and socio-economic conditions;
- To manage shared waters in a reasonable and equitable manner using the ecosystem⁷ approach and guided by the precautionary principle and the polluter-pays principle;⁸
- To preserve and restore ecosystem;⁹
- To carry out environmental impact assessments, draw up contingency plans, set water quality¹⁰ objectives and minimize the risk of accidental water pollution.¹¹

The Convention requires Riparian Parties (Parties bordering the same transboundary waters) to enter into specific bilateral or multilateral agreements and create institutions-joint bodies such as river and lake commissions to meet its responsibilities under the regime. Riparian Parties also have other specific obligations – establishing and implementing joint programmes¹² for monitoring the condition of transboundary waters and the effectiveness of measures taken to prevent, control and reduce transboundary impacts. The Water Convention “codifies three key principles of environmental law,”: precautionary principle,¹³ polluter-pays principle,¹⁴ and

¹ Article 12.

² Article 33.

³ Helsinki 1992, 31 I.L.M. 1312 (1992) U.N.Doc e/ECE/1267.

⁴ Denisov N., Beilstein M. and Dodson L. (2011). *Executive Summary of the Second Assessment of Transboundary Rivers, Lakes and Ground-waters*. United Nations, New York and Geneva.

⁵ Article 2(2) (b) – (c).

⁶ Article 2(1).

⁷ Article 3(2) (i).

⁸ Article 2(5) (a), (b).

⁹ Article 2(2) (d).

¹⁰ Tanzi, A. (2000). *The Relationship Between the 1992 UNUN/ECE 92 Convention on the Protection and Use of Transboundary Watercourses and International Lakes and 1997 UN Convention on the Law of the Non-Navigable Uses of International Watercourses*, Report of the UNECE Task Force on Legal and Administrative Aspects, Geneva, February 2000.

¹¹ Articles 1(2); 2(2) (c).

¹² Article 9(2) (b).

¹³ In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. *Rio Declaration on Environment and Development* (1992), in *Report of the United Nations Conference on Environment and Development*. Rio de Janeiro, 3-14 June, 1992.

¹⁴ In environmental law, the polluter pays principle is enacted to make the party responsible for producing pollution responsible for paying for the damage done to the natural environment.

sustainability.¹ These “keys” are very useful in achieving the goals of sustainable use and allocation of water resources. The UNECE Water Convention obligates the Parties to take all appropriate measures to prevent, control, and reduce any transboundary impact and defines “transboundary impact” to mean “any significant adverse effect on the environment resulting from a change in the conditions 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.”²

Dealing with prevention, control and reduction of pollution, the UNECE Water Convention, requires Parties to “take all appropriate measures to prevent, control, and reduce pollution of waters causing or likely to cause transboundary impact.”³ The Convention further details numerous measures for States to adopt, with a view to tackling pollution problems.” Such measures include the application of low and non-waste technology; minimization of risk of accidental pollution; best available technology for discharges of hazardous substances; treatment of municipal waste water; and best environmental practices to address diffuse sources. The UNECE Water Convention also placed pollution on the front burner, requiring joint institutions to network in addressing the implementation of watercourses agreements. The joint institutions or bodies should collect, compile, and evaluate data in order to identify pollution sources and draw up inventories, elaborate emission limits for waste water and evaluate the effectiveness of control programmes; elaborate joint water-equality objectives and criteria; and develop concerted action programmes for the reduction of pollution loads.

In this regard, the UNECE Water Convention requires States sharing transboundary waters to adopt watercourse agreements and set up joint bodies for implementing those agreements.⁴ A joint body is defined as “any bilateral or multilateral commission or other appropriate institutional arrangements for cooperation between the Riparian Parties.”⁵ Unlike the UN Watercourses Convention, the UNECE Water Convention does not create a detailed procedure for interstate consultations on planned measures. What it does rather is to recognize the role of joint water management bodies to “serve as a forum for the exchange of information on existing and planned uses of water and related installations that are likely to cause transboundary impact.”⁶

(iii) Protocols under the UNECE Water Convention

In order to provide a comprehensive framework on critical issues under the UNECE Water Convention, two protocols have been adopted: the Protocol on Water and Health and the Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters (Protocol on Civil Liability). The Protocol on Water and Health⁷ has been ratified by 21 countries and entered into force on August 4, 2005. The Protocol on Civil Liability⁸ signed by 24 countries and ratified by one, needs additional 15 ratifications to achieve the 16 needed for its entry into force. The aim of the Protocol on Water and Health is to protect human health and wellbeing through better water management, protection of aquatic ecosystems, and the prevention, control and reduction of water-related diseases. While the Protocol on Civil Liability is still not in effect, it is open to all UN Member States, upon approval by the Meeting of the Parties. The Protocol provides for a comprehensive civil liability regime under the polluter pays principle, in order to ensure the availability of adequate and prompt compensation, in the case of damage caused by the transboundary effects of industrial accidents on international transboundary waters.⁹

Apart from the above discussed UN treaties and rules that govern the use of water resources, there are also other regional and non-treaty instruments on water sharing that have been negotiated and maintained. For example, Cambodia, Laos, Thailand and Vietnam, have since 1957 been able to cooperate within the framework of the Mekong River Commission,¹⁰ and they had technical exchanges throughout the Vietnam War; Israel and Jordan have since 1955 held several talks on the sharing of the Jordan River; and The Indus River Commission survived despite the two wars between India and Pakistan. In Africa, the Nile River Basin, which is home to over 160 million inhabitants and shared among 10 countries, was agreed in February 1999 as an enabler to fight poverty and spur economic development in the region by promoting equitable use of, and benefits from, common water resources. The nine Niger River Basin countries have agreed on a framework for a similar

¹ The organizing principle for sustainability is sustained development which includes the four inter-connected domain ecology, economic, politics and culture.

² Article 1(2).

³ Article 2(2) (a).

⁴ Article 9(1) – (2).

⁵ Article 1(5).

⁶ Article 9(2) (h).

⁷ Adopted in London on 17 June 1999.

⁸ Adopted in Kiev on 21 May 2003.

⁹ There are non-treaty instruments [Rules on the Uses of Water Resources] as the Berlin Rules on the Uses of the Water of International Rivers; the Helsinki Rules on the Uses of the Waters of International Rivers, and the Seoul Rules on International Ground-waters 1986.

¹⁰ See the Mekong River Commission website: <http://www.mrcmekong.org/>.

partnership.¹ These cases reflect two important elements of international water resources cooperation, to wit: the need for an institution to effectively develop a process of engagement over a time; and well-funded third party support trusted by all factions.

However, even though these treaties and agreements represent an achievement in themselves, a closer look at the regimes and the context in which they are to function still reveals significant weaknesses and challenges such as inadequate water management structures and weak capacity on the part of countries to implement the agreement. There are other shortcomings in the agreements, for example, inadequate integration of relevant aspects such as the environment, the lack of enforcement mechanism, limited sectoral and institutional scope and exclusion of important riparian States. Therefore, there is need for workable monitoring provisions, enforcement mechanisms, and specific water allocation provisions that address variations in water flow and changing needs.² The international watercourse treaties and agreements could be more concrete and specific in nature, setting out measures to enforce treaties made and incorporating detailed conflict resolution mechanisms in case disputes erupt. There is also need for better and committed cooperation among the relevant States which entails identifying clear yet flexible water allocations and water quality standards, taking into account hydrological events, changing basin dynamics and societal values.³

IV. Institutional Framework

The institutional framework which consists of the UNs agencies, international governmental organizations (IGOs), non-governmental organizations (NGOs), and International Water Commissions represent efforts to raise awareness of freshwater-related issues. They assist in the development, scientific research, information, implementation and enforcement of water resource management policies, laws and regulations. They assist in carrying out comprehensive and integrated assessment of international waters in different regions, as well as a systematic assessment of environmental conditions and problems in transboundary freshwater and surface waters, as well as ground waters. Institutional frameworks at the national, transboundary and regional levels are therefore, “a precondition for sustainable development and management of transboundary waters and for lasting cooperation among the riparian states.”⁴

In this light, the following discussion will briefly assess what the UN agencies are doing for transboundary water cooperation.⁵ Through its Development Law Service, the Food and Agricultural Organization of the UN (FAO)⁶ has a fundamental “enabling” mandate: it helps member countries sharing a transboundary river, lake, or aquifer to establish a legal and institutional environment conducive to stable and mutually beneficial cooperation. This is done with a view to managing and developing transboundary water resources for the benefit of agriculture, fisheries and other uses, including ecosystem support. Recent examples include the permanent Consultation Arrangement established in 2007 by Algeria, Libya and Tunisia for the management of the Northern Sahara Aquifer System, and the similar arrangement currently being negotiated by Mali, Niger and Nigeria for the management of the Lullemeden Aquifer System. FAO also works to strengthen the ability of the governments of the Nile Basin to take informed decisions with regard to the management of their water resources. This objective is being achieved through the development of information products that integrate technical water resources and water use data with agricultural, demographic, socioeconomic and environmental data. Moreover FAO is engaged in the environmental protection and sustainable management of the Okavango River Basin, including all wetlands, fluvial and lacustrine systems, and their biological diversity.

There is also the Global Environment Facility (GEF)⁷ which is an international financing mechanism established in 1991 to address global environmental issues. GEF projects help those countries sharing transboundary surface and ground water to establish priorities, adopt policy legal and institutional reforms in sectors facing degradation or conflicts, and test the feasibility of various investments to address conflicts and reverse degradation. GEF provides assistance to developing countries and countries with economies in transition to improve cross-sectoral management of transboundary basins and aquifers. Over the past 15 years, GEF has provided some \$1 billion in grants – for a total cost of \$4 billion in projects – to more than 150 different

¹ On Monday 12 March 2012, during the 6th World Water Forum by Benin, Burkina Faso, Cote d’Ivoire, Cameroon, Guinea Conakry, Mali, Niger, Nigeria and Chad, the Heads of State of the Niger River Basin, 4,200 km long and covering 210 million ha, agreed to establish a common vision for River Basin Development.

² *Water Without Borders Backgrounder*. (2004). United Nations Development of Public Information.

³ Human Development Report. (2006. “beyond Scarcity: Power, Poverty and the Global Water Crisis.” Chapter 6, UNDP.

⁴ UN Water Thematic Paper (2005 – 2015). *Transboundary Waters: Sharing Benefits, Sharing Responsibilities*. United Nations Office, New York.

⁵ See, UN-Water Thematic Paper (2005 – 2015), *ibid*.

⁶ Food and Agricultural Organization of the United Nations is an agency of the United Nations that leads international efforts to defeat hunger.

⁷ The Global Environment Facility (GEF) was established on the eve of the 1992 Rio Earth Summit, to help tackle our planet’s most pressing environmental problems. See its website: <https://www.thegef.org/gef/>.

countries.

Furthermore, the International Atomic Energy Agency (IAEA)¹ is involved in transboundary groundwater management through a series of projects in Africa and Latin America. These projects aim to enhance cooperation and shared management mechanisms through improved scientific assessment and understanding of aquifer systems and stronger institutional frameworks. The aquifer systems under investigation include the Nubian, North-Western Sahara and the Nile Basin aquifers in Africa, and the Guarani Aquifer system in Latin America. In addition to filling scientific knowledge gaps, these projects are preparing shared aquifer diagnostic analyses, a strategic action programme, and the basis for a convention to govern the shared management of the aquifer. In the Nile basin project, the primary objective is to ensure that the groundwater systems and their inter-relationships with lakes and rivers are fully integrated into the Nile Basin water resources planning and management frameworks.

The UN Department of Economic and Social Affairs (UN-DESA)² on its part promotes and supports international cooperation to achieve development for all. In addition to facilitating intergovernmental debate and recommendations on transboundary waters during meetings of the Commission on Sustainable Development and the Economic and Social Council, UN-DESA provides analytical and technical support to developing countries and countries with economies in transition, namely: (a) analytical work, including publications in “Natural resources/Water series”, for example on existing treaties or institutional and organizational aspects affecting international watercourses; (b) technical cooperation assistance – programme development in cooperation with countries, river basin organizations and other stakeholders, e.g. on the Senegal, Niger, Chad and Okavango basins and the Nubian aquifer; (c) organization of and support to international conferences on regional watercourses, e.g. the Colloquium on the Global and Sustainable Management of the Resources of the Niger Basin (1999) and the International Conference on Regional Cooperation and Transboundary River Basins (2005); and (d) advisory services to the Eurasian Economic Community to promote regional cooperation on transboundary water management in Central Asia (2008).

What is more, the UN Development Programme (UNDP),³ through its GEF International Waters portfolio, Transboundary River Basin Initiative and other programmes, is supporting governance reform processes in over 35 shared water bodies (freshwater and marine), involving over 100 countries. UNDP applies a three-stage approach to catalysing and sustaining integrated, ecosystem-based approaches to the effective governance of shared water bodies, namely: (a) joint fact-finding to reach agreement on priority transboundary issues and their impacts and causes; (b) joint preparation of a Strategic Action Programme (SAP) of agreed commitments to regional and national governance reforms and investments; and (c) support for implementation of agreed SAPs through capacity- building, institutional strengthening and technical assistance. As of 2008, UNDP overall transboundary waters portfolio totals about \$1 billion including co- financing. UNDP works with a wide range of partners including other UN agencies, international financial institutions, intergovernmental organizations, NGOs and the private sector in developing and implementing its transboundary waters programme.

Transboundary waters management is one of the important functions of the UN Economic Commission for Africa (UNECA).⁴ Knowledge is generated through research and studies requested by Governments of riparian countries; land and water resources assessments and institutional studies for integrated water resources management conducted on the Congo, Nile, Lake Chad and the Zambezi river/lake basins, amongst others. The generated knowledge is managed through Web-based portals such as the African Water Information Clearing House. Advocacy and consensus-building is achieved through regional and sub-regional consultative conferences, which discuss the findings of analytical studies as well as publications and build consensus and common positions around key issues of relevance to Africa. Advisory services are provided to African constituencies to address water resources management issues at the national, sub-regional and basin levels.

Furthermore, the UN Economic Commission for Europe (UNECE)⁵ is involved in transboundary water

¹ The International Atomic Energy Agency (IAEA) is an international organization that seeks to promote the peaceful use of nuclear energy, and to inhibit its use for any military purpose, including nuclear weapons. For more information on the IAEA, see its website: <https://www.iaea.org/>.

² The UN Department of Economic and Social Affairs (UN DESA) is part of the United Nations Secretariat and is responsible for the follow-up to the major United Nations Summits and Conferences, as well as services to the United Nations Economic and Social Council and the Second and Third Committees of the United Nations General Assembly. See its website: <https://www.un.org/development/desa/en/>.

³ The UN Development Programme (UNDP) is the United Nations' global development network. For more information, see its website: <http://www.undp.org/>.

⁴ Established in 1958, the UN Economic Commission for Africa (UNECA) is one of five regional commissions. For more, see: www.uneca.org/.

⁵ The UN Economic Commission for Europe (UNECE) was set up in 1947 by ECOSOC. It is one of five regional commissions of the United Nations. Its major aim is to promote pan-European economic integration. For more, see:

management mainly through its Water Convention as discussed above. The Convention obliges Parties to prevent, control and reduce transboundary impacts, including impacts on human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments and other physical structures as well as on cultural heritage and socio-economic conditions. The Water Convention also includes provisions for joint monitoring, research and development, consultations, warning and alarm systems, mutual assistance, institutional arrangements for transboundary cooperation, exchange of information and public access to information. The Meeting of the Parties adopts a triennial programme of work intended to support the Convention's implementation through capacity-building (e.g. on water and health issues), the development of assistance programmes (e.g. for the establishment of legal frameworks and joint bodies), the preparation of guidelines on different aspects of IWRM (e.g. on transboundary flood management, joint monitoring and assessment, and PES), and the establishment of transboundary pilot projects.

There is also the UN Economic and Social Commission for Asia and the Pacific (UNESCAP)¹ which is the founder of the Mekong Committee, now the Mekong River Commission (MRC). Over the years, the institutional framework for Mekong basin cooperation has evolved from the coordination of initial development under the MRC into a foundation for cooperation on development and investment, now known as the Greater Mekong Sub-region Programme. UNESCAP continues to provide advisory services to the MRC in various programmes such as on basin development planning and flood management and mitigation. UNESCAP also promotes the exchange of information and data for better flood management of international river basins under the framework of the WMO/ESCAP Panel on Tropical Cyclones.

Since 1995, the UN Economic and Social Commission for Western Asia (UNESCWA)² on its part has been enhancing regional dialogue and building national capacities for the sustainable management of shared aquifers in the Western Asia region. Training in negotiation skills has been provided to national delegates from Jordan, Lebanon, Palestine and the Syrian Arab Republic. Over the past three years, ESCWA has extended its activities on shared water aquifers to the Euro-Mediterranean Partnership Region. A project aiming at strengthening the capacities of water management institutions in this region to implement sustainable forms of use, management and protection of internationally shared groundwater resources has been implemented in collaboration with the United Nations Economic Commission for Africa, UNECE and UNESCO. This project is expected to consolidate support for regional declarations and agreements.

In addition, the UN Educational, Scientific and Cultural Organization (UNESCO)³ promotes international cooperation among its 193 Member States and six Associate Members in the fields of education, science, culture and communication. The Natural Sciences Sector implements major international programmes in the freshwater, marine, ecological, earth and basic sciences. The International Hydrological Programme (IHP) is the intergovernmental and international scientific cooperative programme of UNESCO for water research and water resources management, education and capacity-building. IHP has developed two specific programmes related to transboundary waters: From Potential Conflict to Cooperation Potential (PCCP) - which is considered a direct contribution of IHP to the World Water Assessment Programme (WWAP) - facilitates multilevel and interdisciplinary dialogue to foster peace, cooperation and development of shared water resources management;⁴ and the International Shared Aquifer Resources Management (ISARM) which is working to set up a network of specialists and experts to compile a global inventory of transboundary aquifers and develop wise practices and guidance tools for shared groundwater resources management.⁵

Also, the UN Environment Programme (UNEP)⁶ work in transboundary waters is undertaken in the context of its Water Policy and Strategy,⁷ which was approved by the Governing Council in February 2007. Broadly, UNEP promotes integrated water resources management with a focus on environmental aspects. It advocates ecosystems management, appropriate adaptation measures to climate change, and mitigation and management of water-related disasters. Current UNEP activities include, at the global level, the development of methodologies and arrangements for transboundary waters assessment and the strengthening of global capacity

www.unece.org/

¹ UNESCAP is the regional development arm of the UN for the Asia-Pacific region. For more, see: www.unescap.org/.

² The UN Economic and Social Commission for West Asia (UNESCWA), headquartered in Beirut, Lebanon, is one of five regional commissions under the administrative direction of the United Nations Economic and Social Council. For more, see: <https://www.unescwa.org/>.

³ UN Educational, Scientific and Cultural Organization (UNESCO) is a specialized agency of the UN. For more, see: www.unesco.org/.

⁴ See the PCCP webpage: <http://www.unesco.org/new/en/pccp>.

⁵ See the ISARM website: <http://isarm.org/>.

⁶ The UN Environment Programme (UNEP) is the voice for the environment in the UN system. For more, see: www.unep.org/.

⁷ Water Policy Strategy of UNEP, available at: http://www.unep.org/esm/Portals/50159/docs/em_water/UNEP_Water_Policy_and_Strategy_ENG.pdf.

to sustain transboundary waters. UNEP supports basin initiatives in Africa (e.g. the Volta River basin and downstream coastal area and the Lullemeden aquifer system) and in Latin America and the Caribbean (e.g. in the La Plata, Bermejo and Amazon basins). UNEP also sponsors the exchange of experiences on transboundary waters; recent events include the Workshop for African River Basin Organizations on adaptation to climate change (August 2008) and the International Conference on Transboundary Water Governance (October 2008).

Importantly, the UN University (UNU)¹ was established by the UN General Assembly in 1973 to serve as an international community of scholars engaged in research, advanced training and knowledge dissemination related to pressing global problems. UNU operates as an active global network of experts and institutions. The International Network on Water Environment and Health (UNU-INWEH) is the water-focused academy within UNU, which aims to strengthen water management, particularly in developing countries. UNU-INWEH is leading two major transboundary water initiatives. The first brought together five lake commissions focused on the African and North American Great Lakes to share experiences and understand common challenges such as climate change. The second, a joint effort by UNU-INWEH with UNEP, UNESCO and other partners, aims to synthesize the scientific achievements from the projects executed through the GEF International Waters Focal Area.

The UN-Water Decade Programme on Capacity Development (UNW-DPC)² is a coordination and capacity development programme also hosted by UNU. Its mission is to enhance the coherence and effectiveness of UN-Water by strengthening its capacity development programmes. UNW-DPC pursues two main activities concerning transboundary waters. It creates a single-point-of-access database to transboundary water-related capacity development activities, accessible to all UN-Water members, partners and other important water management stakeholders. It also organizes expert workshops, with the emphasis on “successful cases” – the practical achievements of institutions with respect to developing feasible institutional structures, in tackling the challenges involved in managing transboundary waters, and in developing the capacity required to do so – will be organized.

Majoring on international health issues, the World Health Organization (WHO)³ develops guidelines for drinking-water quality and recommends water safety plans that require a risk assessment-risk management approach to the quality of surface and ground waters used for drinking water. These activities are particularly important in the framework of transboundary water resources. WHO also implements the International Health Regulations (IHR), which guide countries in handling outbreaks of water-related disease, including in transboundary contexts. In the framework of the Barcelona Convention, WHO performed detailed monitoring of access to and use of sanitation in all human settlements with more than 2,000 inhabitants situated along the Mediterranean coast and assessed the functionality of wastewater treatment systems as well as these facilities’ impact on the interface between freshwater and marine environments, particularly in those areas used for recreational purposes or aquaculture. WHO operates a disaster prevention and management programme and, under the Protocol on Water and Health, works to strengthen countries’ capacities for managing water resources and maintaining fully functional water and sanitation services during extreme weather events.

The World Meteorological Organization (WMO)⁴ is another body which supports national hydrological services, river basin organizations and other institutions in the assessment of the quantity and quality of water resources, both surface and ground water, to meet the needs of society, mitigate water-related hazards, and maintain or enhance the condition of the global environment. Activities include standardizing various aspects of hydrological observation and organizing the transfer of technologies to provide the hydrological data and information required for sustainable development of national and internationally shared water resources. WMO provides advice on flood management policy in the national and transboundary contexts. Through the World Hydrological Cycle Observing System, WMO is improving basic observation activities, strengthening international cooperation and promoting free and unrestricted exchange of data in the field of hydrology.

From the above, it is quite clear that the institutional framework involves a clear mandate for different national and transboundary organizations in order to form and actualize strong governing institutions. This article argues that effective and potent transboundary water management and coordination starts at the national level between different ministries, departments and agencies charged with water responsibility. There is also need for sufficient funding and political commitment. However, overlapping and conflicting functions, fragmented authority, corruption and limited capacity of national institutions are major obstacles. There is also a

¹ UNU contributes, through research and education, to efforts to resolving pressing global problems of human survival, established in 1973. For more information about UNU, see: <http://unu.edu/>.

² UNW-DPC established in August 2007 and funded by the German Federal Government, is hosted by the United Nations to strengthen the activities of UN-Water and to support it in its efforts to achieve the Millennium Development Goals (MDGs) and other targets related to water with capacity development, education, training, and institutional development.

³ WHO’s primary role is to direct international health within the United Nations’ system.

⁴ World Meteorological Organization (WMO) providing official forecasts from National Meteorological Services. For more, see: www.wmo.int/.

lack of strong political will to enact, enforce and domesticate international treaties and agreements needed to effectively coordinate water uses within the various sectors and to manage resources in an integrated manner.

The formation of joint bodies like river, lake and aquifer commissions at the transboundary level should be encouraged. Such joint bodies should possess strong enforcement capacity which is fundamental to ensuring cooperation between the various governmental ministries, agencies and departments and effective management of shared resources. Enforcement and implementation can only be attained if these joint bodies possess strong mandate and political support from the various governments. Apart from the States, other drivers of the system – local stakeholders, non-governmental organizations, research institutions, private sector participants and donors – must all be involved. Achieving success can only be reached in the interaction and cooperation between the various levels of stakeholders. Therefore, vertical and horizontal integration is a necessity, and the joint bodies are a viable platform to achieve such integration.

However, in order to produce results, joint bodies should pursue coordination and advisory functions; policy development and implementation, including formulating joint policies, strategies and visions to implement the agreement. They should also pursue implementation and dispute settlement, which includes monitoring and reporting on implementation and settling differences and disputes. Institutional and administrative structures that facilitate cooperation are necessary. And appropriate rules of procedure and terms of reference for river basin organizations that take into account specific local conditions are also crucial. Institutional and human capacities development by the joint bodies remains a crucial factor. Staff of joint bodies should possess broad competence and skills that bridge disciplines. The capacity to develop and implement policies and laws as well as the relevant enforcement mechanisms remain vital and should be developed accordingly. Setting up financial arrangements to fund internal and external projects and commitments should be pursued.

What is more, cooperative management and development could bring a vast range of benefits including increased hydropower and food production; better access to water for domestic use; improved management of watersheds, and reduced environmental degradation; reduced pollution and more control over damage from floods and droughts. The basin States today are not sure of their water security due to uncoordinated development going on in these basin States as a result of non-cooperation. Today, the use and management of shared water resources requires cooperation of all the Basin States. In this regard, cooperation is not a choice but a must.

V. International Water Law Cases

Apart from treaties and agreements to foster sustainable utilization and preservation of transboundary waters, the courts have also had the opportunity to apply and contribute to those measures. Below, some of such decisions are explored.

*Diversion of Water from the Meuse Case (Netherlands v. Belgium)*¹

In 1863, Belgium and the Netherlands signed a Treaty governing diversions from the Meuse that would supply water for navigation and irrigation canals. As economic conditions evolved, both States enlarged and expanded their respective waterways by constructing new canals, locks, and barrages. In 1937, the Netherlands initiated this injunctive proceeding, alleging that Belgium's expansion projects were in violation of the treaty. Belgium filed counterclaims declaring that the Netherlands' claims were ill-founded and that the expansion projects in the Netherlands violated the treaty. The Court concluded that the Treaty did not prevent either State from taking the actions complained of.

*Oscar Chinn Case (Britain v. Belgium)*²

In 1931 the Belgian Government implemented a program that allowed Unatra, a company with significant ties to the Belgian Government, to offer discounted transportation services on the Belgian Congo. In return, Unatra would receive a reimbursement from the government. Mr. Chinn, a British subject operating a fluvial transport company on the river, could not compete with Unatra's nominal prices and was not eligible for government reimbursement. The Court decided, based on the Convention of Saint-Germain of 10 September 1919 and general principles of international law, that the Belgian Government had not violated its duty to Mr. Chinn with regard to fluvial transport on the waterways of the Belgian Congo.

*Case Relating to the Territorial Jurisdiction of the International Commission of the Oder River*³

The treaty of Versailles established an international commission to rework international regulations pertaining to the Oder river and its tributaries. Poland disagreed with the commission's assertion of jurisdiction over two tributaries within Polish territory. Because the tributaries were found to be "navigable" and to "naturally provide more than one state with access to the sea," the court held that jurisdiction extended to navigable

¹ [1937], P.C.I.J. (Ser. A/B) No. 70.

² [1937], P.C.I.J. (Ser. A/B) No. 70.

³ [1929], P.C.I.J. (Ser.A) No. 23, (Sept. 10).

tributaries within Polish territory.

*Case Relating to the Jurisdiction of the European Commission of the Danube Between Galatz and Braila*¹

Beginning with the Treaty of Paris in 1856, a series of treaties subjected the Danube to an international regime controlled by the European Commission. In 1919 the Treaty of Versailles confirmed the power of the European Commission over those parts of the Danube that the Commission had controlled previous to World War I. But the Treaty only allowed representatives from Great Britain, France, Italy and Romania to serve on the Commission. The Romanian delegate disagreed with the other states' delegates that the Commission had jurisdiction over the river between Galatz and Braila. Upon finding that the Commission had historically controlled the disputed portion of the river, the Court rejected Romania's arguments.

*Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)*²

In 2011, Costa Rica began constructing a road parallel to the San Juan River. The road itself, running from Los Chiles to the Delta region, is on Costa Rican territory. In its complaint, Nicaragua contends that the road has caused harmful environmental effects to Nicaraguan territory—specifically silting of the San Juan River, erosion of the River's banks, harm to the surrounding environment and wetlands. Nicaragua further contends that Costa Rica breached its international obligations by infringing on Nicaragua's territorial integrity, damaging Nicaraguan territory, and violating general obligations in international law and relevant environmental conventions. Nicaragua requests restoration to the status quo ante, damages, and the production and presentation of an appropriate transboundary Environmental Impact Assessment. On 17 April 2013, the Court joined proceedings in the case with the case of *Certain Activities carried out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)*. On 13 December 2013, the Court declined Nicaragua's request for provisional measures.

*Certain Activities carried out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)*³

Costa Rica contended that from August through November 2010, Nicaragua felled trees and dredged the San Juan River to build a canal across Isla Portillos. In so doing, Costa Rica contends that Nicaragua's Army incurred onto and occupied Costa Rican territory in violation of Costa Rica's rights and obligations Nicaragua owed Costa Rica under several international treaties and conventions. Nicaragua responded that the activities they undertook were on Nicaraguan territory. In 2011, the ICJ ordered provisional measures: mandating that neither party maintain personnel in the disputed territory; permitting Costa Rica to send civilian personnel to the disputed territory to protect the environment from potential irreparable harm; prohibiting both parties from engaging in activity that may further aggravate the dispute before the Court renders its final decision; and requiring both parties to inform the Court of its compliance. This case is still pending before the ICJ.

*Pulp Mills on the River Uruguay (Argentina v. Uruguay)*⁴

In 2003, Uruguay authorized the construction of pulp mills on the Uruguay River. In 2006, Argentina initiated proceedings to prevent Uruguay from constructing the mills. Argentina claimed that Uruguay violated treaty provisions that require prior notification and consultation before taking actions that could affect river water quality. The Court rejected Argentina's request for a preliminary injunction, stating that Uruguay intended to and could still comply with its international obligations. As a result, protesters in Argentina blockaded roads to prevent construction. When Argentina appealed to the Court a second time, Uruguay also sought relief from Argentina's protests. The Court rejected both requests because neither state presented risks of prejudice to their rights under the treaty. On 20 April 2010, the Court concluded that while Uruguay breached its international procedural obligations to notify and consult with Argentina before authorizing and commencing construction on the pulp mills, the Court's declaration of Uruguay's breach constituted a sufficient remedy for Argentina's claim.

*Dispute regarding Navigational and Related Rights (Costa Rica v. Nicaragua)*⁵

In 2005 Costa Rica initiated proceedings against Nicaragua for allegedly breaching treaty obligations and other international responsibilities by restricting Costa Rica's navigational rights on the San Juan River. The Court held that Nicaragua has the right to regulate activity on the river for national security reasons. Accordingly, much of Nicaragua's regulatory scheme did not unlawfully violate Costa Rica's right of free navigation "for the purposes of commerce." The Court did find, however, that Nicaragua went too far in requiring visas and tourist cards and by imposing fees on Costa Rican vessels.

*Case Concerning the Frontier Dispute (Republic of Benin v. Republic of Niger)*⁶

The Republic of Benin and the Republic of Niger asked the International Court of Justice to determine the international boundary along the River Niger and River Mekrou sectors, which separate the two republics.

¹ [1927], P.C.I.J. (Ser. B) No. 14.

² Application of 22 December 2011. Decision of 17 April 2013 to join proceedings in the case with the case of *Certain Activities carried out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)*. Order of 13 December 2013 declining Nicaragua's request for provisional measures.

³ Application of 18 November 2010. Order of 8 March 2011.

⁴ Judgment of 20 April 2010. Rejection of Argentina's second request for provisional measures (January 23, 2007).

⁵ Application (29 September 2005). Judgment of 13 July 2009.

⁶ Judgment of 12 July 2005. Dissenting opinion of Judge ad hoc Bennouna (French original language).

Benin and Niger also disputed the ownership of several islands within the River Niger sector and asked the Court to specify which State owns each of the islands. The Court applied the principle of *Uti Possidetis Juris*, which allows administrative delimitations established during a colonial periods to become international frontiers at the moment when independence is achieved. Because Benin and Niger both escaped the colonial control of France in the 1960s, the Court identified the administrative boundaries that existed during France's colonial administration and endorsed them as the official boundary between the States.

Case Concerning Kasikili/Sedudu Island (*Botswana v. Namibia*)¹

The Kasikili/Sedudu Island lies in the Chobe River on the border between Botswana and Namibia. Botswana and Namibia asked the International Court of Justice to determine the international boundary and legal status of the Island based on the Anglo-German Treaty of 1 July 1890 and general principles of international law. The parties agreed that the Anglo-German Treaty, which defines the boundary along the Chobe River, was binding on them as successor states to Great Britain and Germany. In applying the terms of the Treaty, the Court found that the Island is within the borders of Botswana. Additionally, the Court rejected Namibia's alternative claim of prescription because Namibia's predecessor used the Island without claiming territorial sovereignty, and when Namibia did claim title, Botswana's predecessor rejected that claim and thus precluded Namibia's subsequent claim of prescriptive title.

Case Concerning the Gabčíkovo-Nagymaros Project (*Hungary v. Slovakia*)²

In 1977 Hungary and Czechoslovakia signed a treaty obligating the States to cooperate in the construction of a system of dams and locks along a section of the Danube River that formed the border between the States. Construction commenced in 1978 but progressed slowly due to political and economic transformations in both States. In 1989, Hungary abandoned the project, justifying its decision on claims of changed circumstances and impossibility. In 1993, Czechoslovakia peacefully separated into two nations: Czech Republic and Slovakia. Slovakia assumed its predecessor's responsibilities under the treaty because the planned hydraulic system fell within its territory along the Danube River. After continued negotiations failed, Slovakia devised "Variant C," an alternative plan to complete the project. Under Variant C, Slovakia dammed the Danube and appropriated between 80 and 90% of the river water. The dispute came before the International Court of Justice in 1994 and was decided in 1997. The Court rejected Hungary's claims of changed circumstances and impossibility but also concluded that Slovakia, by putting Variant C into operation and unilaterally taking control of a shared resource, had violated international law and the 1977 Treaty. Ultimately, the Court ordered the parties to "re-establish co-operative administration of what remains of the Project."

Land, Island, and Maritime Frontier Dispute (*Honduras v. El Salvador*) 1986, 2003³

In 1839, the Federal Republic of Central America broke up, and Honduras, El Salvador, Costa Rica, Guatemala, and Nicaragua became independent states. By 1986, Honduras and El Salvador were still in disagreement over six sectors of the boundary between them. Thus Honduras and El Salvador submitted a Special Agreement to the International Court of Justice to resolve their boundary dispute. They also asked the Court to rule on the legal status of islands and other maritime areas within the Gulf of Fonseca. Regarding certain maritime aspects of the case, the Court allowed Nicaragua to intervene. The Court and the parties agreed that the principle of *Uti Possidetis Juris* should operate to create international frontiers where administrative boundaries existed prior to independence of the countries. Accordingly, based on documentary evidence of administrative boundaries, the Court delimited the boundary in the disputed areas. For some areas where evidence was insufficient, the Court gave weight to watersheds and other identifiable topographical features.

VI. Conclusion

While this article has reviewed major global and regional water agreements which have led to a number of positive developments, institutional challenges and vulnerabilities however, remain. The 158 of the world's 263 international basins lack adequate cooperative management framework. Also, of the 106 basins with water institutions, approximately, two-thirds have three or more riparian states, yet less than 20 percent of the accompanying agreements are multilateral. Despite the progress made, treaties and agreements with substantive references to water quality management, monitoring and evaluation, conflict resolution, public participation, and flexible allocation methods remain few. As a result, most existing global water agreements continue to lack the tools necessary to promote long-term, holistic water management.

Transboundary and national water development and management are strongly linked to sustainable and responsible growth. Thus, an integrated approach that favours long-term and contingency planning is required. In addition, information based on well-organized measurement networks and monitoring programmes is a

¹ Judgment of 13 December 1999.

² Judgment – 3 September 1998.

³ Judgment of 13 September 1990 – Application by Nicaragua for Permission to Intervene

prerequisite for accurate assessments of water resources and problems. In this context, public participation is very fundamental in order to maximize agreement, enhance transparency and decision-making, create ownership and facilitate the acceptance and enforcement of decisions and policies. Adopting a participatory approach is also a mechanism for gaining a better or common understanding between the various stakeholders on the nature of a given problem and the desirability of specific outcomes.

Riparian countries should focus first on optimizing the generation of basin-wide benefits, and secondly on sharing those benefits in a manner that is agreed as fair. The use of water, rather than the allocation of water itself, provides by far the best scope for identifying mutually beneficial cooperative actions. This apart, funding is very important. Effective development and management of transboundary water resources, more and more widely understood as an international and common public good, requires appropriate financing. Funding the development of adequate legal instruments, establishing institutions, developing capacity, creating monitoring, data sharing and assessment systems and – most costly of all – long term investment programmes that optimize equitable use and protection of the shared water body, need to be sustainable.

This article made the point that transboundary water allocation and management issues still remain a major challenge to the sustainability of inland water ecosystems, in places where rivers, lakes, or aquifers are shared between countries. To surmount this challenge, there is need for improved international cooperation among all States within a water system, in conformity with the ecosystem approach. A generous application and use of existing international watercourse treaties and agreements remain a sensible way forward. The challenge however, is that despite the numerous watercourse agreements on transboundary water-management, there are still a lot of watercourses without an adequate, basin-wide, legal framework for cooperation. Likewise, the existing agreements are not always effective. This article concludes that in order for the international, regional and basin communities to move forward, refine, and expand their cooperative water management structures it is necessary for them to establish adaptable institutional management structures; clear and flexible criteria for water allocations and quality; equitable distribution concept; and detailed conflict resolution mechanisms for resolving conflicts. These are prerequisites for sustainable, effective and long-term basin management.