The legal response to the world's water crisis

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1. Introduction

In the last century, global withdrawals of water made to satisfy demands for human consumption has increased six -fold. This impressive increase in water demand is due to the combination of different but interacting factors, such as the expansion and diversification of human utilisation of water and the high rate of the world's population growth. These increases have come at high environmental costs. Half of the world's rivers and lakes are seriously polluted and 50 per cent of the world's wetlands have disappeared in the last century. Similarly, many of the most important groundwater aquifers are being over-mined, with water tables already very deep and dropping by metres every year[1].

The growing pressure on freshwater supplies, matched with the consideration that, although renewable, water is ultimately a limited resource, has led specialists to analyse global water problems in terms of "water scarcity" or "world's water crisis"[2]. International water law may provide a means for reaching solutions to global water concerns. The purpose of this presentation is to shed light on the principles governing the use of international freshwater resources. In particular it deals with international watercourses, as they have to date formed the principal object of the law applicable to freshwater resources in the international sphere. This does not mean that there is not a need for an expanded coverage of the rule of law in this area, dealing in a more complete manner with groundwater resources as well as with all other sources, by they terrestrial or atmospheric.

Until the adoption of the *United Nations Convention on the Law of Non-Navigational Uses of International Watercourses* (the UN Watercourses Convention) in 1997, the international

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[1] Hague Academy of International Law, Centre for Studies and Research in International Law and International Relations, Water Resources and International Law, Salman M. A. Salman, The Present State of Research Carried out by the English-Speaking Section of the Centre for Studies and Research, 2001, at 64. *See* also: The United Nations World Water Development Report, Water for People, Water for Life, 2003.

[2] *See*: S. McCaffrey, "Water Scarcity: Institutional and Legal Responses", in *The Scarcity of Water: Emerging Legal and Policy Responses* 43 (E.H.P. Brans et al. eds., 1997); P.Wouters, Salman M.A.Salman and P. Jones, "The Legal Response to the World's Water Crisis: What Legacy from The Hague? What Future in Kyoto?, 4 *University Denver Water Law Review*, 2001, at 418;

community did not have at its disposal a set of written rules and principles dealing with transboundary watercourses[3]. Until that time, the *Helsinki Rules on the Uses of the Waters of International Rivers* (the Helsinki Rules), adopted by the International Law Association (ILA) in 1966, were the only written rules to which one could refer in order to identify the principles and rules applicable in the management of water resources[4]. However, the Helsinki Rules had not been endorsed by an inter-state political body, but only by a non-governmental agency. In addition, there had been much discussion on the binding character of such Rules.

Although the UN Watercourses Convention has not entered into force yet, it lays down the main building blocks for water management at the international level. These foundations, which delineate the means for achieving an integrated approach to water management, are composed of three main pillars. They deal, respectively, with the sharing of international waters, the protection of the environment and the obligation to cooperate.

2. Water sharing principles

The water sharing principles are the "equitable and reasonable use" principle and the obligation of not causing significant damage to other watercourse states (i.e. "the no-harm rule"). Both principles are strictly connected to the notion of state's sovereignty. In particular they prescribe limitations upon the sovereign rights of states. The conceptual framework of the water sharing principles is the theory of the "limited sovereignty". This legal theory is opposed to the so-called absolute territorial sovereignty theory, under which states claimed absolute freedom in the use of transboundary waters located in their territories. This legal approach has its origin in the opinion rendered in 1895 by the Attorney General Harmon in the dispute between Mexico and the United States over the use of the Rio Grande[5]. However, claims by states to be absolutely sovereign in the use of the international waters within their jurisdiction have to be rejected. Today, the theory of the "limited sovereignty" is generally recognized as the theoretical background of the water sharing principles governing the use of international watercourses.

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[3] United Nations Convention on the Law of Non-Navigational Uses of International Watercourses, 21 May 1997, text available at http://www.un.org/law/ilc/texts/nonnav.htm

[4] Report of the 52nd Conference of the International Law Association, Helsinki, 1966 (London 1967).

[5] It should be noted that in 1906 a treaty has been concluded by Mexico and the United States recognizing the respective rights of both parties to the use of the waters of the Rio Grande (Convention concerning the Equitable Distribution of the Waters of the Rio Grande for Irrigation Purposes, 21 May 1906).

The principle of equitable and reasonable use and the obligation of not causing significant damage to other watercourse states are recognized in several multilateral conventions as well as in international case-law. Examples of international conventions recognizing the principle of equitable utilization and the no-harm rule are the *Convention on the Protection and Use of Transboundary Watercourses and International Lakes* adopted by the United Nations Economic Commission for Europe in Helsinki in 1992 (the Helsinki Convention)[6], the Senegal Water Charter[7] and the Mekong Treaty[8].

In several cases, the international jurisprudence has recognized the binding nature of the obligation of not causing significant damage to other states. In 1941, in the Trail Smelter dispute between the United States and Canada, the arbitral tribunal stated that "under the principles of international law (…) no state has the right to use or permit the use of its territory in such a manner as to cause injury" to other states[9]. More recently, the International Court of Justice (ICJ), in its advisory opinion on the legality of the threat or use of nuclear weapons, held that "the existence of the general obligation of states to ensure that activities within their jurisdiction or control respect the environment of other states is now part of the corpus of international law relating to the environment"[10]. The principle of the no-harmful uses of a state's territory is also endorsed in Principle 21 of the Stockholm Declaration[11] and in Principle 2 of the Rio Declaration[12].

In the light of this jurisprudence, it can be concluded that riparian states, in exercising their activities, must respect the sovereignty of other riparian states and they must abstain from acts that may cause significant damage to other riparian states. While the obligation of not causing damage to other watercourse states is formulated in negative terms as an obligation of abstention, the principle of equitable utilization is more dynamic. In particular, it involves a positive duty for riparian states to ensure an equitable utilization of watercourses.

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[6] United Nations Economic Commission for Europe, Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki 17 March 1992), available at: http://www.unece.org/

[7] Organisation pour la Mise en Valeur du Fleuve Sénégal, OMVS, Charte des Eaux du Fleuve Sénégal, 18 May 2002. Text available at: www.lexana.org (only French version available).

[8] Agreement on Cooperation for Sustainable Development of the Mekong River Basin, International Legal Materials (5 April 1995), 34 at 865.

[9] Trail Smelter Arbitration (Canada v. United States), Final Award (11 March 1941), United Nations Reports of International Arbitral Awards, 3 at 1965.

[10] International Court of Justice, Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, ICJ, (8 July 1996) at para. 29. Text available at: www.icj-cij.org

[11] United Nations Declaration on the Human Environment adopted at the United Nations Conference on the Human Environment, Stockholm 16 June 1972, UN doc. A/CONF.48/14/Rev.1.

[12] United Nations Declaration on Environment and Development adopted at the United Nations Conference on Environment and Development, Rio de Janeiro 14 June 1992, UN Doc. A/CONF.151/5/Rev.1.

The importance of the principle of equitable utilization has been affirmed in 1997 by the ICJ in a dispute between Hungary and Slovakia (Gabicikovo-Nagymaros case). In its decision, the ICJ stated that the operation of a Slovak project on the Danube did not respect the basic right of Hungary to have an equitable and reasonable sharing of the waters of that river[13]. Many factors must be taken into account in implementing the sharing of international waters. They are enumerated by Article 6 of the UN Watercourses Convention and include social, economic, cultural and historical considerations. The UN Watercourses Convention does not establish a hierarchy among the factors to be considered. The only exception is stated in Article 10 which provides that in case of a dispute between different uses of an international watercourse, priority should be given to the satisfaction of vital human needs.

3. The protection of the environment

The second pillar of international watercourse law deals with environmental protection. Since the 1970's the necessity of water protection has been recognized. Principle 2 of the 1972 Stockholm Declaration called for the protection of water resources for the benefit of present and future generations. The Agenda 21 adopted at the Rio Conference devoted an entire chapter to water. Chapter 18 deals with the "protection of the quality and supply of freshwater resources"[14]. Several regional agreements such as the Helsinki Convention mention the obligation of protecting the environment of international watercourses. Moreover, this obligation has been recognized by the ICJ in the Gabicikovo-Nagymaros case. The Court, after stressing the emergence of new norms and standards in the field of environmental protection, stated that "such new norms have to be taken into

[13]The dispute over the Gabčikovo-Nagymaros project deals with the 1977 Treaty between Hungary and Czechoslovakia (from 1993 Slovakia). It provided for the construction of two series of locks, one at Gabčikovo, in the territory of Czechoslovakia, and the other at Nagymaros in Hungary. The two constituted "a single and indivisible operational system of works". Yet, as a result of intense criticism generated by the project in Hungary, the Hungarian government in 1989 decided to suspend and then to abandon the project. Czechoslovakia worked out various alternative solutions but Hungary maintained that further environmental studies were required before construction could be pursued. The failure of negotiations opened the phase of unilateral actions: while Czechoslovakia started to work on Variant C (which entailed, among other things, a unilateral diversion of the Danube by Czechoslovakia on its territory, the construction of a dam and the building of two hydroelectric plants), Hungary notified Czechoslovakia of the termination of the 1977 Treaty. In 1993, Hungary and Slovakia signed a special agreement submitting their dispute to the ICJ. In the special agreement, parties asked the Court to decide, *inter alia*,: whether Slovakia was entitled to proceed to Variant C and what were the legal effects of the notification of the termination of the 1977 Treaty by Hungary. In 1997, the ICJ decided the continuing existence of the 1977 Treaty and that Slovakia was not entitled to put Variant C in operation. International Court of Justice, Case concerning the *Gabčikovo-Nagymaros* Project (Hungary/Slovakia), ICJ, (25 September 1997). Text available at: www.icj-cij.org

[14] Chapter 18, "Protection of the Quality and Supply of Freshwater Resources: Application of Integrated Approaches to the Development, Management and Use of Water Resources", UNCED Report, Annex II, Agenda 21, 7 June 1992, UN Doc. A/CONF.151/26. Text available at: www.igc.apc.org/habitat/agenda21/ch-18.html

consideration, and such new standards given proper weight, not only when states contemplate new activities but also when continuing activities begun in the past"[15].

The UN Watercourses Convention, in its Article 20 provides that "watercourse states shall (…) protect and preserve the ecosystem of international watercourses". This provision refers to the concept of ecosystem. The obligation of protection contained in this Article covers land and water areas. States must prevent harm caused by uses of the watercourses to elements of the environment different from water resources. At the same time, they also have the obligation of not causing harm to watercourses deriving from activities situated in land areas.

While the UN Watercourses Convention formulates in quite vague terms the obligation of protecting watercourses as a part of a broad natural ecosystem, the Helsinki Convention is more precise in that respect. In particular, it provides an articulated series of obligations on the prevention of "transboundary impact". Under that Convention, states must prevent any significant effects on the environment which 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"[16]. Indeed, to look upon a river or lake basin as an ecosystem means to view it not merely as a unit in which water resources are interlinked, but as a unit in which many elements of the environment (freshwater, salt water, air, land and all forms of life) interact within the boundaries of the catchments basin.

The environmental regime established by the UN Watercourses Convention needs to be strengthened in order for it to be effective. For example, the obligation of protecting watercourses ecosystems should be included in the section devoted to the procedural obligations. Under the UN Watercourses Convention, states only have an obligation to notify planned measures which may have an effect upon watercourse states. Moreover, the obligation of information concerning planned measures is only in relation to the watercourse environment and it does not refer to the concept of ecosystem.

[15] International Court of Justice, Case concerning the *Gabčìkovo-Nagymaros* Project (Hungary/Slovakia), *op.cit*., at para. 140.
[16] Helsinki Convention, Article 1.2.

4. The obligation of cooperation

In order to ensure sound ecosystem management of watercourses, the cooperation between states plays a crucial role. Indeed these mechanisms can develop and monitor the implementation of the environmental regime. In the field of international watercourse law, the obligation of cooperation gives concrete expression to the protection of the watercourses ecosystem as well as to the principles governing the sharing of international waters[17]. According to the UN Watercourses Convention and to several other water-related agreements, cooperation between riparian states may be achieved by different means: by establishing joint bodies and commissions of which riparian states are members, by regular exchange of information and data, by consultation and notification of planned measures. In particular, the establishment of joint commissions between riparians is a means of preventing disputes from arising and of contributing to their resolution. Moreover, they provide with a framework for notification of planned measures and consultations, and define an action program of common interest to improve water management and decrease pollution.

Interestingly, international commissions ensuring multiple functions have been created from a very early date. The Rhine Commission and the European Commission for the Danube were created in 1815 and 1856 respectively. In the course of the twentieth century a large number of joint commissions and bodies have been put in place in Europe, but also in other regions of the world, especially in Africa[18]. Within such a context it is surprising to see that the commitments made in the UN Watercourses Convention do not set up the obligation for joint institutional mechanisms[19]. On the contrary, the Helsinki Convention and other regional agreements are much stronger in their plea for the establishment of joint institutions for the management of international watercourses[20].

The obligation of cooperation is multifaceted with regard to international watercourses. In 1999, the ICJ, in a dispute concerning the determination of a river boundary between Botswana and Namibia, emphasized the need to consider watercourses as spaces of cooperation. The Court reminded the two countries of the need to create a common regime over shared watercourses[21]. States sharing an international watercourse form a "community of interests", the essential feature of which is the

[17] *See* : L. Boisson de Chazournes, "The role of Diplomatic Means of Solving Water Disputes: A Special Emphasis on Institutional Mechanisms", *Resolution of International Water Disputes*, (Peace Palace Papers, Kluwer Law International, 2003), at 91-110.
[18] *See*: Convention creating the Organization for the Development of the Senegal River (OMVS), 11 May 1972; Revised Protocol on Shared Watercourses in the Southern African Development Community, 7 August 2000.
[19] *See*: Articles 8 and 24 of the UN Watercourses Convention.
[20] In particular, *see*: Article 9.2 of the Helsinki Convention.

perfect equality of all riparian states. The notion of "community of interests" between riparian states has been affirmed in 1929 by the Permanent Court of International Justice (PCIJ) in the Oder river case[22] and the same concept has been recalled by the ICJ in 1997[23].

5. Conclusions

The adoption of the UN Watercourses Convention constitutes an important step towards co-management of international watercourses. Even if the Convention never enters into force, it is and will remain a reference document for dealing with global water problems. This instrument provides the appropriate framework for establishing cooperation between states. It also contains binding rules, namely those regarding the water sharing principles, the protection of the environment and the obligation of cooperation.

However, cooperation remains to be developed further towards an effective co-management of international watercourses in line with the concept of integrated water resources management. Concerning this concept the Ministerial Declaration of The Hague on Water Security in the 21st Century stated that integrated water resources management "includes the planning and management of water resources, both conventional and non-conventional, and land. This takes account of social, economic and environmental factors and integrates surface water, groundwater and the ecosystems through which they flow. It recognises the importance of water quality issues. In this, special attention should be paid to the poor, to the role, skills and needs of women and to vulnerable areas such as small island states, landlocked countries and desertified areas"[24].

In the same direction, a more optimal regime for international watercourses should enable public involvement in the management of international watercourses. Human Rights Law provides important governance parameters necessary for ensuring that an international watercourse is managed in the interest of all. Such parameters include, *inter alia*, the protection of minorities and indigenous people, as well as the right of access to information. In this respect it is also worth

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[21] Case Concerning *Kasikili/Sedudu Island* (Botswana/Namibia), ICJ, (13 December 1999), paras. 102-103. Text available at: www.icj-cij.org

[22] The PCIJ stated that: "[the] community of interest in a navigable river becomes the basis of a common legal right, the essential features of which are the perfect equality of all riparian States in the user of the whole course of the river and the exclusion of any preferential privilege of any one riparian State in relation to the others." Permanent Court of International Justice, Territorial Jurisdiction of the International Commission of the River Oder (Czech., Den., Fr., Germ., Gr.Brit. and Swed. v. Pol.), PCIJ, Judgment No. 16, Series A, No. 23, (10 September 1929), at 27.

[23] International Court of Justice, Case concerning the *Gabčìkovo-Nagymaros* Project (Hungary/Slovakia), *op.cit*., at para. 85.

noting the affirmation of a human right to water.[25]. The *Protocol on Water and Health* to the Helsinki Convention appears to refer to this right when it states that "equitable access to water, adequate in terms both of quantity and of quality, should be provided for all members of the population, especially those who suffer a disadvantage or social exclusion"[26].

[24] Ministerial Declaration of The Hague on Water Security in the 21st Century adopted at the Second World Water Forum at the Hague in March 2000. Text available at: http://www.thewaterpage.com/hague_declaration.htm

[25] Committee on Economic, Social and Cultural Rights, *General Comment n° 15 on the Right to Water,* 26 November 2002, E/C.12/2002/11. Text available at: www.unhchr.ch

[26] Article 5.1 of the Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, London, 17 June 1999, United Nations Economic Commission for Europe. Text available at: www.unece.org