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WATER LAW IN A GLOBALISED WORLD

THE NEED FOR A NEW CONCEPTUAL FRAMEWORK

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Water Law in a Globalised World: the Need for a New Conceptual Framework

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Abstract

Water law is at a crossroads. Its basic structure and principles are being challenged by the increasingly global dimension of water issues. Yet, neither the international framework nor national water laws acknowledge the intrinsic links between the global water cycle and access to water at the local level. Water law must be reconceived around a broader understanding of water while being allowed at the same time to shed its old sectoral framework that makes little space for integration with other related areas of law such as environmental and human rights law.

Keywords: National and international water law, principles of water law, control over water, environment and water, human rights and water

1. Introduction

Water law has long been conceived as if water could be mostly controlled and managed at the national level. The main exception was in the context of international watercourses where various forms of cooperation have developed over time between states. Water law also often developed in a sectoral manner, whereby different water bodies or different water uses were regulated separately. In recent years, there has been a number of attempts at moving

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beyond what are essentially dated understandings of water. This includes, for instance, efforts to move towards river basin planning.

Advances towards broader conceptions of water use cannot mask the fact that, to date, most water law is based on a fiction that aggregate water availability is a given. In reality, water availability cannot be controlled at the national level. Most countries are on the whole highly dependent on precipitation for their water needs.[1] Further, rainfall is linked to global weather patterns over which no country has control, regardless of the experiments of some countries in creating or stopping rainfall.

As a result, the overall frame of reference for water regulation should be the global water cycle, which is the primary conveyor of water.[2] It includes much more than rainfall, which only happens to be the most visible means of transmission of water from the global commons onto a specific landmass.[3] The global water cycle includes the oceans acting as the primary water 'storehouse' and also all the different phases through which water moves into the atmosphere by evaporation or otherwise, condenses and then finds it way back down through precipitation.[4] Precipitation may be used immediately or progressively through the different ways in which water lingers, for instance, in the form of groundwater.[5] In the very short term, the global water cycle may be relatively insignificant where groundwater is the primary source of water for most water uses; however, it becomes a key determinant of water availability as soon as the time perspective increases slightly.

The link between water availability at the local level and the global water cycle is not a new phenomenon. Further, there is no novelty in the fact that no individual country can control the global water cycle.[6] There are, however, novel factors that call for giving new premises to water law and policy. Climate change stands out as having the potential to significantly alter the global water cycle.[7] In a context where climate change may have impacts that increase physical scarcity in already water-scarce regions of the world, it is imperative to take a global perspective of water scarcity that is linked to climate change, in terms of impacts and in terms of principles underlying action by all states. In fact, one of the biggest challenges is to ensure that water law and environmental law are integrated. In part, this is because the climate

1 UN-Water, *Water in a Changing World – The United Nations World Water Development Report 3* (UNESCO on behalf of the UN World Water Assessment Programme, 2009) 166

2 Eg United States Climate Change Science Program, *Strategic Plan for the United States Climate Change Science Program* (2003) 53.

3 Eg UN Water (n 1) ch 10.

4 Eg US Geological Survey, The Water Cycle, available at <ga.water.usgs.gov/edu/watercycle summary.html>.

5 cf Ramsar, *An Integrated Framework for the Ramsar Convention's Water-related Guidance* (Resolution IX.1 Annex C), 9th Meeting of the Conference of the Parties to the Convention on Wetlands, Kampala, Uganda (8-15 November 2005) 26.

6 Eg C Gautier, *Oil, Water, and Climate – An Introduction* (Cambridge University Press 2008) 169

7 ibid (concerning predicted changes in the water cycle) 181.

change regime includes a comprehensive set of principles that have no counterpart in water law. These are principles which water law must integrate if it is to find answers to some of the challenges that climate change will wreak in the medium-term future, from melting glaciers to changing rainfall patterns. Climate change law provides a good starting point to consider some of the global aspects of water law because climate change, like water, is a problem that is quintessentially global while being at the same time a local, regional and national problem. This is something that water law has not even started to address, even though there is an increasing number of discussions on the links between climate change and water at the national and international levels.[8]

Overall, the global nature of water, even in its most local dimension, calls for a fresh look at water law and policy. This presupposes new bases and principles. This article seeks to make a starting point towards rethinking some of the premises of national and international water law to ensure that it is effectively suited to address the challenges of the coming decades. It builds on an increasingly often acknowledged need for water law reform.[9] It argues that what is needed is not reform, but rather a complete rethink of water law. First, it needs to be conceived in a way which will integrate water regulation from the local to the global level. Second, it needs a set of basic principles that will recognise the nature of water as a source of life understood in its global context. Third, water law must be intrinsically linked to other areas of law, in particular human rights and environmental law.

This article is divided in three parts. The first section outlines the context within which the need to set out new bases for water law arises. It examines three issues that highlight the need for change: the lack of congruence between national and international law, the emphasis on rights of appropriation and the limited and sectoral nature of water law in many countries. The second section moves on to consider proposals for water law that are responsive to the challenges to be faced in coming decades. It focuses on questions related to control over water and argues that it is time to move beyond appropriation of water by individuals or the state in favour of non-appropriative concepts such as the principle of common heritage of humankind. The third section takes up the issue of the sectoral nature of water law and the need to move towards a broader conception of water law. It focuses on environmental law and human rights, two branches of law that have already integrated water issues in a multiplicity of ways. On the whole, this article argues that a

8 Eg BC Bates and others (eds), *Climate Change and Water* (Intergovernmental Panel on Climate Change (IPCC) Technical Paper VI, 2008); Global Water Partnership, *Better Water Resources Management – Greater Resilience Today, More Effective Adaptation Tomorrow* (Global Water Partnership 2008); and TR Karl and others (eds), *Global Climate Change Impacts in the United States* (Cambridge University Press 2009).

9 Eg AD Tarlock, 'Four Challenges for International Water Law' (2010) 23 Tulane Envtl LJ 369.

comprehensive rethinking of the bases and structure of water law is necessary to ensure that it can address mounting challenges at the national and international levels. This must be done by ensuring that the current division between national and international water law is sidelined in favour of a much more integrated framework whose model could in part be the development of environmental law since the 1970s. This will ensure, for instance, that drinking water, which is the primary concern at the national level, does not remain a peripheral area of international water law.

2. Context for Rethinking Water Law

Water law is a relatively old area of law that has evolved over many decades. This explains in part some of the difficulties that need to be addressed at this juncture. First, the gradual evolution of water law implies that many laws still reflect a scientific understanding of water that is outdated, as in the case of countries whose groundwater and surface water are still governed by different legal principles and different laws. Second, the early development of water law implies that many laws were well entrenched before the development of environmental law or human rights. Third, states have been slow in agreeing to effective cooperation on water at the international level. Indeed, the only existing international treaty on international watercourses, the Convention on the Law of the Non-navigational Uses of International Watercourses (UN Watercourses Convention),[10] is to-date a failure from two different angles. On the one hand, while it is on the whole a reflection of existing principles of customary law,[11] it has not yet come into force.[12] On the other hand, it has failed to integrate developments in international environmental law and was thus outdated at the time of its adoption.

2.1 Emphasis on Sovereign Control and Individual Rights

Water law has long been subjected to contradictory forces. The direct link between water and survival has ensured that various societies premised water law on the impossibility for anyone to own water.[13] At the same time, individuals and rulers have, since antiquity, attempted to control access to water.

10 Convention on the Law of the Non-navigational Uses of International Watercourses (adopted 21 May 1997, not in force) UN Doc A/51/869.

11 For example, SC McCaffrey, 'Some Developments in the Law of International Watercourses' in MG Kohen (ed), *Promoting Justice, Human Rights and Conflict Resolution through International Law* (Martinus Nijhoff 2007) 781, 783.

12 There were 24 ratifications as of April 2011 (35 ratifications necessary for entry into force).

13 This was, for instance, the case with Roman law. See *Justinian's Institutes*, trans P Birks and G McLeod (Duckworth 1987).

The tendency to assert sovereign power evolved over time but remained until recently deeply entrenched into the fabric of water law in different contexts. At the international level, water law is now based on recognition of the need for equitable and reasonable utilisation of watercourses by riparian states.[14] This implies in principle a level of restriction on the sovereign rights that states assert. Yet, the UN Watercourses Convention fails to clearly break away from a focus on sovereignty and remains based on the idea that states' relations concerning a shared watercourse are governed by legal equality and territorial integrity.[15] Further, in the case of groundwater, the link between soil and groundwater has strongly influenced the perception that states can assert sovereignty over aquifers.[16]

At the national level, governments in various parts of the world have asserted or attempted to assert control over water, especially with a view to control the economic benefits derived from its exploitation. Thus, in India, there has been a relatively long history dating back to colonial times of attempts by the state to assert full control over water. While a general prohibition of ownership of water has been a recurrent feature of water law, this very prohibition has had the unfortunate impact of providing a stepping stone for the state to give itself a relatively wide margin of appreciation in deciding how to use water for the greater common good. This progressively led to a situation where the state arrogated itself the right to use water. This tendency to assert full control over water can be found in India both in legislation still in force dating from colonial times such as the Madhya Pradesh Irrigation Act, 1931 asserting that '[a]ll rights in the water of any river, natural stream or natural drainage channel, natural lake or other natural collection of water shall vest in the Government',[17] as well as in the much more recent Bihar Irrigation Act that restates word for word the provision of the colonial act.[18]

Besides rights of control asserted by the government, there has also been a strong emphasis on individual rights of access to and control over water. In fact, individual rights have on the whole been at least as important as state control over water, partly because the state never had the capacity to actually control all water under its jurisdiction. As a result, in practice, water has often been controlled and appropriated by a variety of individuals. In many countries, individual appropriation of water has been linked to access to land.[19] Landowners have thus acquired rights akin to water ownership even

14 Convention on the Law of the Non-navigational Uses of International Watercourses (n 10), art 5.
15 ibid art 8(1).
16 International Law Commission, 'Draft Articles on the Law of Transboundary Aquifers- Report on the Work of its Sixtieth Session' (2008) UN Doc A/63/10, art 3.
17 Madhya Pradesh Irrigation Act 1931, s 26.
18 Bihar Irrigation Act 1997, s 1.
19 Eg S Hodgson, 'Land and water – The Rights Interface' (FAO, FAO Legislative Study 84, 2004) 2.

though water rights have often been conceptualised as usufructuary in view of the prohibition of ownership of water per se. A complex web of land-based water rights has developed over time in most parts of the world, giving landowners de facto control over water flowing past their land and virtual or actual ownership of water on or under their land.[20]

The most salient point with regard to individual water rights is that while state ownership has been challenged at least partly over the past couple of decades, no such challenge has been mounted against individual rights. In fact, reforms over the past couple of decades have tended to strengthen individual appropriation of water resources. One of the landmark developments in water law in recent years has been the development of tradable water rights that are not necessarily linked to land ownership. These so-called 'modern rights' completely change the structure of water rights that have historically been conceived in relation to land.[21]

Taken together, the tendency of the state to assert direct or indirect control and the multiplicity of rights that have been granted to individuals in relation to water have led to a situation where water is more often seen as a 'natural resource' to be (sustainably) exploited or a 'good' to be traded and efficiently managed rather than the basic substance that makes life on earth possible. This is damaging because it stifles all attempts to take a broader perspective on water. Individual landowners have no particular interest in taking a broad view of groundwater management even if their individual use affects other individuals and the environment. Individual states have no particular interest in considering water in its overall dimension since it is often not their domestic water management that affects the global water cycle but other activities such as industry contributing to climate change and hence to changes in the global water cycle. This therefore calls for an entirely new perspective, moving away from appropriation.

2.2 Sectoral and Limited Nature of Water Law

Law often evolves in response to specific challenges that arise at a given point in time. There is thus nothing particularly surprising in the finding that water law has grown over time in a multiplicity of different ways and dimensions. There is, however, a number of important characteristics of existing water law that matter in the context of the need to conceive of water in a comprehensive and global dimension.

20 ibid 76.

21 Eg S Hodgson, 'Modern Water Rights – Theory and Practice' (FAO, FAO Legislative Study 92 2006); and V Waye and C Son, 'Regulating the Australian Water Market' (2010) 22 Journal of Environmental Law 431.

For decades, water law did not evolve as a unified body of law for at least two reasons. First, in a context where the close links between surface and groundwater were not yet evident, it was not inappropriate to adopt distinct laws for different bodies of water. Second, water has so many uses, each with its own complexity, that it often made sense to regulate different uses, such as domestic use and irrigation, separately.

The outcome of this trend was the sectoral development of water law in several or many components. The disadvantages of a sectoral perspective became apparent quite some time ago. Indeed, a number of countries have already adopted framework water laws that remove some of the worst aspects of sectoral laws, such as different legal principles applying to different water bodies.[22] Yet, even in countries that have started to move in earnest beyond sectoral laws, a number of additional problems are likely to remain.

First, the evolution of water law over time has tended to give landowners significant privileges and rights in terms of access to and use of water. Governments thus often find it politically difficult to abrogate all existing water rights when adopting new laws, with the result that they may have the main impact of adding complexity to an already very complex regulatory framework.[23] It is probably only in 'extraordinary' situations, like the one in which South Africa found itself after the end of apartheid, that a relatively clean break from the sectoral framework can be attempted at once.[24]

Second, the sectoral development of water law has had the unintended consequence of often sidelining water as a whole. This has, in most cases, happened progressively and without any intention of doing so. The central role that water plays, not only for what can be identified as the water sector but also in various other areas such as agriculture, the environment or human rights, has ensured that water's central role in different aspects of human life often falls under the mandate of different institutions. This is in a way most visible at the international level where there is no 'international water organisation'. The incongruity of this situation has been recognised at the UN level for some time. Yet, the UN system has not been able to deliver more than inter-agency coordinating structures.[25] At present, the coordinating structure

22 Eg South Africa, National Water Act 1998 and Brazil, Law No. 9, 8 January 1997 (National Water Resources Policy) 433.

23 For India, eg 'Ground Water Management and Ownership – Report of the Expert Group' (Government of India Planning Commission 2007) 41 where it is argued that 'no change in [the] basic legal regime relating to groundwater seems necessary'.

24 Eg A Gowlland-Gualtieri, 'South Africa's Water Law and Policy Framework: Implications for the Right to Water' in P Cullet and others (eds), *Water Governance in Motion – Towards Socially and Environmentally Sustainable Water Laws* (Cambridge University Press 2010) 388; and AR Seetal and G Quibell, 'Water Rights Reform in South Africa' in BR Bruns, C Ringler and R Meinzen-Dick (eds), *Water Rights Reform: Lessons for Institutional Design* (International Food Policy Research Institute 2005) 153.

25 Inter-agency coordination was undertaken through Administrative Committee on Coordination until 2001.

established by the Chief Executives Board for Coordination is known as UN-Water and largely restricts itself to strengthening coordination among existing institutions.[26] This is useful but insufficient insofar as it does not address the need for considering all water issues under one roof. At the national level, even where water is considered in a relatively centralised manner, there are nearly always major issues that are addressed separately. This is particularly true in the case of drinking water.[27]

Third, over the past few decades, some areas of law, in particular environmental law, have rapidly developed and integrated significant water issues as part of their mandate. Water has thus become one of the key dimensions of environmental law over time. This integration of water within environmental law has, however, not necessarily seen its counterpart in the integration of environmental law principles into water law. As a result, it is often in environmental law that the most significant advances concerning, for instance, water pollution can be found. The treatment of one issue in different areas of law is not particularly problematic if effective coordination exists between the different areas concerned. At the international level, the lack of a water-specific institutional framework or more developed international water law ensures that there is no specific place where the global dimension of water is considered. If at all, this happens in the context of debates on other global environmental issues such as climate change. This will, by definition, be insufficient because of the specific role that water plays not only as a source of life on earth in general but also as a source of human life in particular.

Today, water is recognised as a key aspect in most legal frameworks. Yet, it has proved difficult until now to move beyond sectoral instruments. This is in part due to the fact that water is addressed in a number of different legal frameworks and managed by a variety of different institutions. This has led to a situation where it is often difficult to address the bigger challenges of water law. This is, in particular, the case with regard to the need to consider water in its global dimension linked to the global water cycle, something which has until now not been considered sufficiently.

2.3 Dichotomy Between National and International Water Law

Water law has evolved in parallel at the domestic and international levels for many years. Yet, water law has been and remains appreciably different at the

26 Chief Executives Board for Coordination, 'Report of the High-Level Committee on Programmes at its sixth session' (18-19 September 2003) Doc CEB/2003/7 Decision 1.

27 This can, for instance, be due to the fact that drinking water supply is typically organised at a local level, something which obtains in two completely different countries like India and Switzerland.

national and international levels. This can be compared with some other areas of law such as environmental law, which has seen significant cross-fertilisation between the national and international levels in the past few decades.

The distinction between domestic and international water law does not stem from a conflict between the two—rather it derives from the fact that international water law does not yet address some of the crucial issues that make up the core of domestic water law. On the one hand, drinking water has been one of the main law and policy concerns of governments at the national level for decades. On the other hand, international water law has very little to say about drinking water. To the limited extent that it does, it is international human rights law which takes this agenda forward.[28] In a context where international water law has not integrated developments in other areas of law, such as the recognition of the human right to water, the consideration of drinking water in human rights law does not imply that water law's scope is expanded.[29]

Until recently, the distinct evolution of national and international water law was at its most unremarkable. International water law had developed into a highly complex web of rules, centred around issues related to the sharing of transboundary watercourses and addressing an increasing array of issues beyond early efforts at regulating navigation.[30] At the national level, an increasingly intricate set of rules had come to regulate a growing number of water uses, ranging from use by landowners for agricultural and other purposes, to drinking water supply in rural and urban areas.[31]

This distinction between national and international water law was probably never appropriate because water availability for humankind has always depended mainly on the global water cycle. In recent years, the increasing globalisation of environmental problems, in particular those related to rapid climate change, have resolutely confirmed that water must be addressed at the global level. Indeed, water is an intrinsic and central part of any attempt that will be made to address climate change.[32]

28 Eg Convention on the Rights of the Child (20 November 1989) UNTS 3 art 24 1577; and Committee on Economic, Social and Cultural Rights, 'General Comment 15: The Right to Water' (Articles 11 and 12 of the International Covenant on Economic, Social and Cultural Rights) (2002) UN Doc E/C.12/2002/11.

29 More progressive understandings of international water law can be found for the time being only in documents such as the Berlin Rules on Water Resources, International Law Association, Report of the Seventy-first Conference – Berlin (2004).

30 Eg SC McCaffrey, *The Law of International Watercourses* (Oxford University Press 2007) 64.

31 For an overview of the different types of water rights around the world, eg Hodgson (n 21) 9ff.

32 Eg Bates and others (n 8).

3. Rethinking Forms of Control Over Water

The emphasis on sovereign and individual access to and control over water has been a hallmark of most legal frameworks in the modern era. This has neither fostered equitable access to water nor sustainable use of water. Over time, there have consequently been various calls for reforms.[33] While awareness of the issue is spreading, the main changes that can be identified at this juncture have taken place at the national level.

3.1 National Level—The Public Trust Doctrine

There has been a long-standing recognition that full state ownership may not be the most appropriate form of water regulation. One of the instruments developed to ensure state control while not asserting state ownership was first mainstreamed during the Roman Empire.[34] The principle of public trust, which has been revived in recent decades in a number of countries, seeks to recognise the special nature of water as a substance beyond appropriation but that nonetheless requires some form of regulation and governance.[35] The state is usually deemed to be the 'trustee' with a mandate to sustainably and equitably control access to water.[36] This is theoretically sound but can only work well where the state is self-disciplined, since the principle of public trust leaves significant leeway to the trustee in deciding how to manage the resource. In other words, the principle of public trust as now recognised, for instance, in South Africa and India, restricts the assertion of full control by the state but does not necessarily dictate specific policies that the government must follow.

The limitation of the principle of public trust linked to a strong culture of assertion of state power is well illustrated in India. On the one hand, the Supreme Court has clearly laid out that the principle of public trust is applicable to all surface flowing water in India.[37] On the other hand, the assertion of public trust has not led to the repeal of laws asserting the sovereign rights of the state over water. The Indian legal system is therefore today made up, in

33 Eg BR Bruns, C Ringler and R Meinzen-Dick (eds), *Water Rights Reform: Lessons for Institutional Design* (International Food Policy Research Institute 2005).

34 *The Institutes of Justinian* (n 13) 55.

35 For developments of the notion of public trust in the United States in relation to groundwater, eg J Tuholske, 'Trusting the Public Trust: Application of the Public Trust Doctrine to Groundwater Resources' (2008) 9 Vermont J Envtl L 189.

36 Eg *National Audubon Society v Department of Water and Power of the City of Los Angeles* 33 Cal 3d 419, 441 (Supreme Court of California 1983).

37 *MC Mehta v Kamal Nath* (1997) 1 SCC 388 (Supreme Court of India, 1996). Note, however, that the Court has not hesitated in qualifying the principle in more recent cases by, for instance, stating that the public trust 'does not exactly prohibit the alienation of the property held as a public trust'. *Intellectuals Forum, Tirupathi v State of Andhra Pradesh* AIR 2006 SC 1350 (Supreme Court of India, 2006) [60].

some states, of completely contradictory statements. Thus, in Bihar, the Irrigation Act adopted in the same year as the first Supreme Court case on public trust specifically states that all water rights 'shall vest in the State Government'.[38]

If the Indian experience, analysed with a kind eye, could lead the analyst to identify an overall trend towards restricting the assertion of state power over water, experience in other parts of the world confirms that the affirmation of direct control by the state remains a strongly entrenched perspective. Thus, in Kenya, new water legislation adopted less than a decade ago firmly asserts that '[e]very water resource is hereby vested in the state'.[39]

The preceding paragraphs indicate that at the broadest level, the state is often tempted to assert as much power over water as it can. Yet, there is an increasing recognition that unfettered state power is unacceptable in this context. The principle of public trust has the potential to significantly circumscribe the arbitrariness of state action but does not per se restrict the government's choices in terms of ensuring environmentally sustainable and equitable outcomes.

3.2 International Level—the Principles of Common Concern and Common Heritage of Humankind

International law has dealt with various problems of a global nature and is thus perfectly capable of addressing many of the issues that may arise in the water sector. Indeed, states have already successfully negotiated different regimes addressing issues of global importance from the United Nations Convention on the Law of the Sea (LOSC) to the climate change regime.

In international law, one of the main hurdles to cooperation on global problems has been the perceived threat that cooperation entails with regard to sovereignty. This has been particularly acute when states perceive themselves as having significant control over a resource, such as in the case of biological resources, forests or water.[40] Yet, over time different forms of cooperation have evolved. In international environmental law, where some of the most intricate problems have arisen with regard to this perceived loss of sovereign control implied in international cooperation, states have slowly agreed to the development of new legal concepts that take into account the reality that sovereign control is, in part, a fiction where there are significant transboundary elements involved in the control, conservation or management of the substance that is physically under the control of a given state.

38 Bihar Irrigation Act, 1997, s 3.
39 Kenya, Water Act, 2002, s 3.
40 Concerning forests, eg D Humphreys, 'The Elusive Quest for a Global Forest Convention' (2005) 14 Rev Eur Comm & Int'l Envtl L 1.

The recognition that the transboundary nature of an issue calls for new forms of cooperation has not led states to automatically relinquish sovereignty in all cases. Thus, in the case of a sensitive issue like biodiversity, one of the compromises found between full sovereignty and free access has been the development of the notion of common concern of humankind.[41] This has the advantage of maintaining the appearance of sovereign control while subtly acknowledging that states have a duty to cooperate in developing and implementing effective legal regimes to address the transboundary dimension of the problem. Nearly all states have agreed to this solution in the context of a global problem like climate change, as well as in the context of the conservation and use of biological resources that have much stronger links with each national state.[42] Since biological resources are now almost universally recognised as a common concern of humankind,[43] water should also qualify since it has at least as many transboundary facets as biodiversity.[44]

The recognition that water is a common concern of humankind would take the debate forward insofar as it would be a first step towards recognising that water must be considered in a qualitatively different manner. Yet, recognising that water, or for that matter biodiversity, is a common concern of humankind will not lead to the kind of changes that water law requires. Indeed, one of the main 'visible' consequences of biodiversity being a common concern of humankind is that states now assert 'sovereign rights' rather full sovereignty.[45] This does not per se change the legal status of the resources covered.

The difficulties associated with moving away from a legal conception based on sovereignty in the context of the biodiversity or climate change regimes can be explained by the fact that there is a lot at stake for states in terms of immediate control over natural resources and economic development. In the context of the law of the sea, a qualitatively much bigger step was taken when states negotiated a new legal regime for resources which had never been previously claimed by any state. This made it much easier for states negotiating LOSC to agree that deep seabed resources found in the high seas would be covered by the principle of common heritage of humankind.[46] While the original

41 Convention on Biological Diversity, Rio de Janeiro (adopted 5 June 1992, came into force 29 December 1993) UN Doc UNEP/CBD/94/1 preamble.

42 For climate change see, United Nations Framework Convention on Climate Change (adopted 9 May 1992, came into force 21 March 1994) UN Doc A/AC.237/18 preamble. For biodiversity, see Convention on Biological Diversity (n 41).

43 The membership of the Convention on Biological Diversity comprised 193 states as of April 2011.

44 This was not accepted by the majority of states at the time of the negotiations for the 1997 Convention. PW Birnie and AE Boyle, *International Law and the Environment* (Oxford University Press 2002) 140.

45 Convention on Biological Diversity (n 41) art 3.

46 United Nations Convention on the Law of the Sea (adopted 10 December 1982, came into force 16 November 1994) UN Doc A/CONF.62/122, part XI.

text adopted in 1982 had to be watered down to ensure the coming into force of the Convention more than a decade after its adoption, the basic notion of common heritage has been retained.[47]

The principle of common heritage of humankind is based on the idea that there should be no individual ownership claims over the matter covered. It recognises that all states have a stake in its conservation and sustainable use and seeks to ensure joint management to the broadest possible extent.[48] The latter dimension was one of the most difficult points in the context of deep seabed minerals and the extent of international control had to be curtailed through the 1994 agreement to ensure broader support for LOSC.[49] Common heritage also includes an inter-generational dimension that considers the use and conservation of the matter concerned in a long-term perspective.[50]

Common heritage is of immediate interest in the context of water. Water is of global importance and its limited, effective availability requires forms of co-operation that will intensify in the future. Indeed, while water as a substance may be abundant on the planet in general, its availability as safe, clean freshwater that sustains human life and life on the continents is limited. Further, technological options for water augmentation, such as desalination, have not proved that they constitute effective, sustainable solutions to existing and future physical water scarcity.[51] In addition, while some countries suffer from excessive water, climate change will change the rules of the game in many parts of the world, requiring global cooperation in a context where no country that is 'water-secure' today can be assured that will remain the case in a few decades time.

At the international level, the concept of common heritage would provide an apt starting point to address the global water cycle as an issue which is both of common interest to all states and beyond the control of any one or any group of states. While most states have not shown any specific interest in broadening their vision for water until now, it is only a matter of time before governments wake up to the fact that sovereign control over water is increasingly irrelevant because of the likely havoc caused by climate change to the

47 See Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea (adopted 28 July 1994, came into force 28 July 1996) UN Doc A/RES/48/263.

48 cf SJ Shackelford, 'The Tragedy of the Common Heritage of Mankind' (2009) 28 Stanford Envtl LJ 109.

49 Eg BH Oxman, 'The 1994 Agreement and the Convention' (1994) 88 Am J Int'l L 687; and G Jaenicke, 'The United Nations Convention on the Law of the Sea and the Agreement Relating to the Implementation of Part XI of the Convention', in U Beyerlin and others (eds), *Recht zwischen Umbruch und Bewahrung* (Springer 1995) 121.

50 Eg R Wolfrum, 'Common Heritage of Mankind', in R Wolfrum (ed), *Max Planck Encyclopedia of Public International Law* (Oxford University Press 2010).

51 Eg UNEP, Sourcebook of Alternative Technologies for Freshwater Augmentation in Some Countries in Asia (UNEP 1998).

global water cycle.[52] It is likely that some countries may benefit from the changes that will take place, but projections indicate that most developing countries are likely to suffer in coming decades.[53] Since most of Asia and Africa will suffer, this alone indicates that a majority of the world's population are likely to be severely affected.

The necessity to rethink the legal status of water is clear at the international level in view of the increasing importance that the global water cycle will take in coming years. This requires a complete change of perspective. As a result, it will take some years until a majority of states are convinced of the necessity of this change. Change is, however, inevitable if water law is to have the capacity to address looming crises.

At present, the proposal to consider water as part of the common heritage of humankind sounds like wishful thinking in a context where states have not even managed to agree on a progressive international treaty for transboundary watercourses.[54] Yet, the idea has already progressed. This is confirmed, for instance, by recent developments in Québec where water is now legally considered common heritage.[55]

The example of Québec shows that there is already a precedent for recognising water as a common heritage at the national level. In any case, for most countries the shift would not be dramatic. Indeed, as indicated earlier, at the national level, there has been, often for centuries, a recognition that water should be not subjected to anyone's ownership. The label 'common heritage of humankind' would be in a sense little more than a semantic change. The difference that arises with the new label is that it puts the legal status of water at the national and international level in perspective. This makes sense because there is no discontinuity between water at the national and international levels. The move towards considering water as a common heritage also provides a much cleaner break with the state's tendency to assert control through its sovereign power or more indirectly through the principle of public trust.

Similarly, common heritage status would put to rest unnecessary controversies over new challenges. There is, for instance, the case of debate over the ownership of water found in clouds in the context of experiments in cloud

52 cf S Villalpando, 'The Legal Dimension of the International Community: How Community Interests Are Protected in International Law' (2010) 21/2 Eur J Intl L 387, 397, talking generally about the fact that the awareness of the need to public common interests 'needs a spark (more often a great blaze) to appear'.

53 Eg Bates and others (n 8) ch 5.

54 See above remarks concerning the UN Watercourses Convention in the main text at n 10 above.

55 Québec, An Act to Affirm the Collective Nature of Water Resources and Provide for Increased Water Resource Protection 2009, s 1.

seeding. While it is likely that today there would be diminishing support for suggestions that landowners have a claim over that water,[56] arguments were made in the second part of the twentieth century at least in the United States that such claims could, in certain circumstances, be justified.[57] The very fact that ownership of something that could only be owned through the assertion of a legal fiction is proposed suggests that there are very strong grounds for giving the whole system new bases. There are legal and moral reasons explaining why water must be not owned. There are also a number of good practical reasons linked to the absence of actual control over the global water cycle. Any attempt to assert property over something like the moisture content of clouds would likely lead to a deluge of claims, making effective cooperation on this vital substance virtually impossible.

4. Towards an Integrated and Comprehensive Water Law

As noted above, water law has often developed in a sectoral manner. Additionally, it does not effectively integrate or address the connections with other areas of law. The progressive broadening of water law is something which has progressed in certain countries as in the case of Québec, where the recent law moves away from a regime considering surface and groundwater separately.[58] Yet, in some countries and at the international level, much ground remains to be covered. Thus, in a case like India, while in policy terms there are increasing discussions on the need for a broader perspective,[59] the law still dissociates, for instance, irrigation and drinking water, something which cannot be appropriate in a situation where groundwater is the key source of water for most water uses.

Some countries are still a long way from having an integrated water law framework. Yet, it is likely that steps will be taken in coming years as the links between different parts of the water legal framework become more evident. What is less obvious is the way in which water law will integrate issues arising from other areas of law. This section considers environmental law and human rights as two central areas where the connections with water are already evident.

56 T Majzoub and others, 'Cloud Busters: Reflections on the Right to Water in Clouds and a Search for International Law Rules' (2009) 20 Colorado J Int'l Envtl L & Pol'y 321.

57 Eg Comment, 'Legal Remedies for 'Cloud-Seeding' Activities: Nuisance or Trespass?' (Spring 1960) Duke LJ 305; and Comment, 'Who Owns The Clouds?' (1948) 1 Stanford L Rev 43.

58 Québec, An Act to Affirm the Collective Nature of Water Resources and Provide for Increased Water Resource Protection (2009); and M Cantin Cumyn, 'Recent Developments to the Law Applicable to Water in Québec' (2010) 34 Vermont L Rev 859.

59 Eg RR Iyer, 'A Synoptic Survey and Thoughts on Change' in RR Iyer (ed) *Water and the Laws in India* (Sage 2009) 567, 609.

4.1 The Environmental Law Dimension

Water law and environmental law intersect at various points. Indeed, pollution and quality issues constitute important areas of water law. Similarly, water is a key issue in environmental law. Yet, the two are distinct branches of the law. On the one hand, environmental law is much broader than its water dimension. On the other hand, important areas of water law ranging from drinking water supply to irrigation do not directly fall under the purview of environmental law. The two areas must thus be considered simultaneously as closely related and as distinct.

Water has been addressed in national and international environmental law in various contexts for several decades. Thus, starting with the Declaration of the United Nations Conference on the Human Environment, water was included as falling under the scope of international environmental law.[60] In a more specific context, the Ramsar Convention focuses in large part on water.[61] At the national level, water has also often been considered in the context of environmental law.[62]

In international water law, the key treaty—the UN Watercourses Convention—integrates issues of conservation and preservation of water but fails to clearly give environmental considerations priority over use.[63] There exist more progressive examples where environmental law has been more effectively integrated. This is, for instance, the case with the UNECE Convention on the Protection and Use of Trans-boundary Watercourses and International Lakes.[64] Interestingly, general commitments of member states in the latter convention relate mostly to environmental aims, from the prevention, control and reduction of water pollution to the need to adopt ecologically sound and rational water management.[65] Its protocol on water and health is particularly noteworthy because it directly incorporates some of the most advanced principles of environmental law, in particular the precautionary principle.[66] Yet, this is not sufficient to declare that water law has gone far enough. First, the UNECE Convention cannot be assumed to represent the status of international

60 Declaration of the United Nations Conference on the Human Environment, Principle 2 (16 June 1972) UN Doc A/CONF.48/14/Rev.1.

61 Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat (2 February 1971) 996 UNTS 245.

62 Eg S Bell and D McGillivray, *Environmental Law* (6th edn, Oxford University Press 2006) ch 18.

63 Convention on the Law of the Non-navigational Uses of International Watercourses (21 May 1997) UN Doc A/51/869 art 1. See also P Wouters, 'The Legal Response to International Water Scarcity and Water Conflicts – The UN Watercourses Convention and Beyond' (University of Dundee, Water Law and Policy Programme 2003) 20

64 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (adopted 17 March 1992, came into force 6 October 1996) UN Doc. ENWA/R.53.

65 ibid art 2.

66 Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, (adopted 17 June 1999, came into force 4 August 2005) UN Doc MP.WAT/AC.1/1999/1, art 5.

water law even if its own parties have in principle agreed to open its membership to all states.[67] Indeed, it is unlikely that a majority of countries from other regions of the world will be happy to simply sign up to instruments that were negotiated without their participation. Second, the reality of water law reforms in a number of countries of the South in the recent past does not indicate that water law in general has matured to the point where it is perfectly at ease with the integration of environmental law principles. In fact, the Indian example mentioned above is not isolated. Thus, even in a country which is often assessed as having progressive water legislation such as South Africa, the National Water Act, 1998 does not integrate the precautionary principle.

At the national level, the situation is quite varied. Some countries have demonstrated significant progress in integrating an environmental dimension to water law, at least in terms of broad principles. This is, for instance, the case with Uruguay, whose Constitution asserts that water is an essential natural resource and a human right under a provision that concerns environmental protection.[68] In fact, the first principle guiding the development of water policy is the protection of the environment. In more specific terms, the case of India illustrates the difficulties in effectively integrating environmental law developments into water law. The Water (Prevention and Control of Pollution) Act, 1974 is one of the most visible pieces of legislation concerning water because it is one of the few federal laws on water. It happens to focus on water pollution. At the same time, while the Water Act, 1974 is devoted to issues that concern the environment, it does not set out principles of water conservation applicable throughout the water sector, something which is not taken up elsewhere in the absence of framework water legislation. In addition, and much more worryingly, other water laws adopted since 1974 have, to a large extent, ignored or at least failed to incorporate environmental law principles. Such integration can be inferred but the basis is the case law, not legislation.[69]

On the whole, the intrinsic link between water and the environment is, in principle, not openly challenged. In fact, water policy reforms initiated a couple of decades ago and implemented in many countries in recent years have been specifically premised on the need to link water and the environment.[70] Thus, water scarcity understood as physical scarcity has provided the

67 The amendment providing for opening up membership beyond the UNECE is not yet in force. See Amendment to arts 25 and 26 of the Convention, Meeting of the Parties to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (28 November 2003) UN Doc ECE/MP.WAT/14.

68 Constitución política de la República Oriental del Uruguay, art 47.

69 Eg *Tirupur Dyeing Factory Owners Association v Noyyal River Ayacutdars Protection Association* (Supreme Court of India 2009) <ielrc.org/content/e0904.pdf> accessed 9 March 2011, where prevention and precaution are discussed in the context of a water dispute.

70 cf M Finger and J Allouche, *Water Privatization – Trans-National Corporations and the Re-Regulation of the Water Industry* (Spon Press 2002) 24.

rationale for the policy reforms introduced. This does not, however, amount to an effective integration of environmental law principles in water law. In fact, recent water laws tend to be premised on an environmental rationale without integrating environmental law principles. This is, for instance, the case with water law reforms taking place in India. Thus, whereas the National Water Policy, 2002 is premised on the fact that water is both scarce and is part of a larger ecological system,[71] the laws adopted by the various Indian states in recent years do not integrate environmental law principles and at best make passing reference to environmental issues.

The premise that water and the environment are two sides of the same coin is an inescapable conclusion that is far from new. This is also widely accepted in principle, as confirmed by detailed treatment in the International Law Association's water resources rules.[72] The gap that is visible is with regard to the actual recognition of binding legal principles. Since water law is in some respect less developed than environmental law, it must start by borrowing elements from the existing regime. Further, environmental law shows the way for water law insofar as it has at least in part recognised that the environment is to be considered in a broader context. As a result, issues of equity play, for instance, a central role in environmental law that goes further than existing water law. In international environmental law, differential treatment recognises the limitations of a system based on the formal legal equality of states that does not take into account actual inequalities.[73] At the national level, environmental law is intrinsically linked to issues of equity as, for instance, recognised in the call for 'environmental justice' that has grown fast in diverse jurisdictions.[74] For its part, water law has not ignored equity as a general notion but international water law has, for instance, not yet integrated differential treatment as one of its core principles.

The discrepancy between environmental and water law is partly due to the fact that while environmental law has developed a number of key new concepts and principles to address the new challenges that humankind faces, water law has failed to keep pace. In fact, one of the key characteristics of water law today is that it is in some ways antiquated compared to developments elsewhere. This is true both at the international level and in various national jurisdictions in different measure. Since water constitutes part of environmental law, this confirms that new environmental law principles are at least in principle applicable to water law in general, including

71 Government of India, National Water Policy 2002, ss 1(3), 1(4).

72 Berlin Rules on Water Resources, International Law Association – Report of the Seventy-first Conference (Berlin 2004).

73 Eg P Cullet, 'Common but Differentiated Responsibilities' in M Fitzmaurice, DM Ong and P Merkouris (eds), *Research Handbook on International Environmental Law* (Edward Elgar 2010) 161.

74 Eg D Schlosberg, *Defining Environmental Justice – Theories, Movements, and Nature* (Oxford University Press 2007).

environment-related water issues as well as most other water issues and uses. Some of these principles may need to be adapted for their application in specific areas of water law, such as drinking water, irrigation and dams. Yet, they provide perfect starting points to ensure that water law is in tune with the latest developments of international and national law and works in tandem with other closely connected areas of law such as environmental law.

4.2 The Human Rights Dimension

Water law is noticeable at the national and international levels for often dissociating the recognition of the human right to water from actual water laws and regulations. This is true to a large extent in countries where the right is only recognised implicitly and is even more apparent in the context of the associated human right to sanitation where the regulatory framework concerning sanitation tends to be framed in largely technical language.[75]

The issue is twofold. On the one hand, some laws simply ignore the existence of the human right to water and talk, for instance, of water being a 'basic need' rather than a 'human right'.[76] This does not affect the status of the human right where it is recognised but ensures that water law fails to provide the actual content and realisation of the human right to water, something that should be at the core of any water law. In such a situation, water law turns out to be largely irrelevant from the point of view of the realisation of the human right to water because it severs the links between the two, even though drinking water-related laws probably all contribute in some way to the realisation of the human right to water. This is not appropriate from a human rights point of view. Indeed, when it comes to accountability concerning the realisation of human rights, a 'need' is not a 'right' and categorisation as a need dramatically reduces the burden put on the government in terms of the realisation of the right, as well as in terms of its duty towards other actors involved in supplying water.[77]

On the other hand, in some countries, the government has taken policy measures that significantly contribute to the realisation of the human right to water without directly referring to fundamental rights. This is, for instance, the case in India where the Government implemented, for more than three decades, a vast programme known as the Accelerated Rural Water Supply

75 Concerning sanitation, eg A von Flüe, 'Le droit à l'assainissement en Suisse' (International Environmental Law Research Centre, Briefing Paper 2009-01).

76 Kenya, Water Act 2002, s 2.

77 cf Report of the Independent Expert on the Issue of Human Rights Obligations Related to Access to Safe Drinking Water and Sanitation to the Human Rights Council, Fifteenth session (Catarina de Albuquerque 2010) UN Doc A/HRC/15/31.

Programme (ARWSP) for ensuring drinking water supply in all rural areas of the country.[78] This sought to ensure a minimum level of 40 litres per capita per day and was thus, for instance, much more progressive than the free water policy adopted in South Africa more than two decades later, which limited the entitlement to a per household amount of 6,000 litres per month calculated as equivalent to 25 litres per capita per day.[79] The significance of the ARWSP is that the Government of India took these steps long before the Supreme Court intervened in the debate, asserting that it read a fundamental right to water into the Constitution.[80] The ARWSP was very positive from the point of view of the realisation of the human right to water in rural areas. Yet, the limitations of a policy framework that contributes to realising the right to water but is not encapsulated within a framework that is directly related to the right itself, has become apparent in recent years. Indeed, in 2009, the Government of India decided to redefine its drinking water supply policy and simply moved away from a policy focused on the realisation of the human right to water for each and every individual in favour of a new concept of water security at the household level.[81] This can possibly be construed as a retrogressive step in terms of the progressive realisation of human rights because it moves away from an individual entitlement.[82] Yet, under Indian law, there is little that is wrong with this approach since it is a simple change of policy, something that the executive does routinely.

These two examples highlight one of the most bizarre contradictions in the water law of many countries. On the one hand, there is a fast increasing acceptance that a democratic legal order must be based on a set of fundamental human rights that can only be justified if it includes a human right to water. This is confirmed by an increasing number of countries in the South formally adding water to the list of fundamental rights as well as by the increasing acceptance of the existence of the right at the international level.[83] On the other hand, in many countries, drinking water laws often remain dissociated from the human rights framework.

This dichotomy between what are essentially progressive constitutional frameworks in the countries that recognise a right to water and more specific

78 Government of India, Accelerated Rural Water Supply Programme Guidelines (1999-2000).

79 South Africa, Regulations Relating to Compulsory National Standards and Measures to Conserve Water (2001) The Regulations allocate 6,000 litres per household. This is equivalent to 25 litres per capita per day as long as the household includes only 8 members. There is no increase in quantity in case of additional household members.

80 Eg *Subhash Kumar v State of Bihar* AIR 1991 SC 420 (Supreme Court of India 1991).

81 National Rural Drinking Water Programme: Movement Towards Ensuring People's Drinking Water Security in Rural India – Framework for Implementation (Department of Drinking Water Supply 2010).

82 cf International Covenant on Economic, Social and Cultural Rights, art 2(1) (adopted 16 December 1966, came into force 3 January 1976) 993 UNTS 3 (1976).

83 Eg UNGA Res 64/292, 28 July 2010, 'The Human Right to Water and Sanitation', UN Doc A/RES/64/292.

laws that are not integrated into the human rights framework must be ended. This is crucial to ensure the legitimacy of water law in years to come as well as to ensure that legal frameworks do not remain akin to discrete silos that fail to communicate with each other. On the one hand, human rights cannot provide the specific content of a right in its implementation on the ground and thus require the existence of more specific laws to ensure the realisation of such rights. On the other hand, water laws need to be integrated into constitutional frameworks, and in particular into the human rights framework. The absence of this frame of reference means that water law run the risk of remaining simply a set of technical and economic prescriptions that cannot address the broader challenges, in particular social and environmental aspects, that are the core mission of the water sector.

5. Conclusion: Conceiving Water Law from the Local to the Global Level

Water has long been a subject of tremendous interest for policy makers. Yet, the lack of understanding and more recently the lack of willingness to recognise that human activity has the capacity to influence the global climate, and hence the global water cycle, has led to a situation where water law does not fully integrate the global dimension of water. This is problematic because the existence of a direct link between the local availability of water and global phenomena like climate change and the global water cycle change the premises on which water regulation is to be developed.

Climate change brings a new dimension to water law, requiring all countries individually and the international community as a whole to rethink the way in which water law is conceived. It is not climate change that has made the water sector in each locality on earth dependent on the global water cycle but it is climate change, more than any other factor in many centuries, that has the capacity to affect it and consequently the whole water sector.

Until now, while water has often been in principle beyond appropriation in recognition of its special relevance to life on earth, governments have not consistently applied this notion at the national level, partly because asserting control over water in a direct or indirect manner has always been a significant tool in asserting or consolidating power. At the international level, states have for the most part refrained from addressing the global nature of water altogether because of its politically sensitive nature.

Water remains a closely guarded subject over which states want to maintain control. While nothing may change in the near future, states will have to reconsider their positions in the medium term. It is thus important that lawyers start considering the future shape of water law at the national and

international levels. As a starting point, water should be considered as a common heritage of humankind in recognition of its global nature and the impossibility for any state to actually control it.

Water law is fast evolving. Yet, this is not sufficient in the current conditions. Water law will first need to shed old principles that are not consonant with the present understanding of the water cycle. At the international level, this will imply moving away from a water law that still focuses in large part on the interests of riparian states towards an international water law framework focusing on the interests of the international community as a whole. This will need to be done in a context which transcends drainage basins and takes the global water cycle as it starting point. Further, water law will need to move beyond the sectoral approach that divides water regulation in arbitrary segments that do not reflect the reality of the different bodies and uses of water. This broader conception of water law needs to be built on principles, some of which already exist in areas of law that have close connections with water, such as environmental law. Such principles, like the precautionary principle, should be integrated in water law as this will give it much stronger legal bases to address the challenges of the future.

The necessity to rethink the basis and structure of water law may not yet be seen as a priority either by national or international policy-makers. Yet, ongoing climate change and its consequences on the global water cycle will ensure the need for a fresh look at water regulation in the not too distant future. The fact that most of humankind is likely to be adversely affected, even though some countries may benefit from climatic changes, should ensure that a consensus can be progressively built. This makes it imperative to start thinking about the future of water law now.