TEC BACKGROUND PAPERS NO. 17

International Law – Facilitating Transboundary Water Cooperation

By Patricia Wouters

Global Water Partnership
Technical Committee (TEC)

Global Water Partnership, (GWP), established in 1996, is an international network open to all organisations involved in water resources management: developed and developing country government institutions, agencies of the United Nations, bi- and multilateral development banks, professional associations, research institutions, non-governmental organisations, and the private sector. GWP was created to foster Integrated Water Resources Management (IWRM), which aims to ensure the co-ordinated development and management of water, land, and related resources by maximising economic and social welfare without compromising the sustainability of vital environmental systems.

GWP promotes IWRM by creating fora at global, regional, and national levels, designed to support stakeholders in the practical implementation of IWRM. The Partnership's governance includes the Technical Committee (TEC), a group of internationally recognised professionals and scientists skilled in the different aspects of water management. This committee, whose members come from different regions of the world, provides technical support and advice to the other governance arms and to the Partnership as a whole. The Technical Committee has been charged with developing an analytical framework of the water sector and proposing actions that will promote sustainable water resources management. The Technical Committee maintains an open channel with the GWP Regional Water Partnerships (RWPs) around the world to facilitate application of IWRM regionally and nationally.

Worldwide adoption and application of IWRM requires changing the way business is conducted by the international water resources community, particularly the way investments are made. To effect changes of this nature and scope, new ways to address the global, regional, and conceptual aspects and agendas of implementing actions are required.

This series, published by the GWP Global Secretariat in Stockholm, has been created to disseminate the papers written and commissioned by the Technical Committee to address the conceptual agenda. See the inside back cover for a list of publications in this series.

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FOREWORD

Transboundary water resources cross national and administrative borders across the globe, supporting in a myriad of ways a majority of the world's population and ecosystems. The Global Water Partnership is committed to 'facilitating transboundary cooperation' in its current strategy and this paper contributes to that mission and focuses on the crucial role of international law in developing and managing the world's shared water resources.

The paper explores how international law facilitates transboundary cooperation in a manner that is accessible to the wider transboundary water community. It discusses the norms and principles contained in treaties and rules of customary law and examines how these work in selected case studies from across the GWP network. The study reveals how the rule of law, central to the law of nations, provides legal parameters and processes that govern the shared uses of transboundary water resources. There is a pervasive misperception that international law fails in its implementation of agreed international agreements and customary norms. But this paper provides evidence to the contrary – the rule of law is a critical foundation for facilitating effective transboundary water cooperation in a many ways. It provides the legal framework within which the actions of transboundary States are evaluated, as lawful or unlawful, with a body of substantive and procedural rules, and mechanisms for dispute avoidance and settlement that enable operational implementation of the 'rules of the game'. The case studies selected from across the GWP network illustrate how this works in practice.

This work is the result of a real team effort, inspired by the Knowledge Chain, the operational link joining up the GWP network. Contributions were made by TEC members, the Stockholm International Water Institute (in the person of Anton Earle), the Global Water Partnership Office and Network Officers, especially under the leadership of Chaminda Rajapakse (representing his colleague Regional Network Officers, who all contributed) with added inputs from Danka Thalmeinerova, who was instrumental in providing the relevant references on transboundary cooperation in practice available in the GWP ToolBox .

We owe an acknowledgement to Torkil Jonch-Clausen, GWP Senior Advisor, for his advice and support. The work also benefitted from contributions from Regional Water Partnerships and many individuals across the GWP Network, who were all keen to help. An earlier collaboration with our colleagues from

INBO in preparing two Handbooks related to this topic, the most recent one launched on World Water Day 2012, "Handbook for Integrated Water Resources Management in the Basins of Transboundary Rivers, Lakes and Aquifers", complementing our earlier joint work in 2009, "A Handbook for Integrated Water Resources Management in Basins." A final thanks to Zaki Shubber who provided research assistance for the paper, to Melvyn Kay for editorial assistance, and to Sergei Vinogradov for his contributions in finalising the work.

I am very pleased to have this important contribution – not only from the substantive knowledge that it adds to this complex area, but also from the process through which this paper emerged as a pioneering effort by the GWP network under the Knowledge Chain.

I am grateful to the principal author of this paper, Professor Patricia Wouters, founding Director of the Dundee UNESCO IHP-HELP Centre for Water Law, Policy and Science and member of the GWP Technical Committee (TEC). At her initiative, GWP, together with the University of Dundee in Scotland, UK, offers scholarships to undertake a module in International Water Law. It is aimed at professionals working in water resources who wish to acquire specialist knowledge of international water law, in particular transboundary water issues. This short course is highly appropriate for practitioners working in governments, NGOs, international organisations, academia, and the private sector whose first degree is in environmental science, hydrology, law, agriculture or a related field.

Dr Mohamed AIT KADI
Chair, GWP Technical Committee

EXECUTIVE SUMMARY

Surface and underground water do not respect political boundaries. This means that states must cooperate to manage water. (GWP Strategy 2009-2013)

Transboundary water resources contribute to the economic, social, and environmental well-being of communities around the globe. Despite their inter-connectivity (national, sectoral), challenges remain in efforts to integrate the management of water resources that are shared across national and administrative borders.

As a *meta-framework for international relations,* international water law provides an identifiable corpus of rules of treaty and customary law that determine the legality of State actions with respect to water resources that cross national boundaries. International water law provides a *platform for identifying and integrating* the relevant legal, scientific, and policy issues and aspects pertaining to the utilization of transboundary watercourses (such as traditional reference to "all relevant factors and circumstances" in determining equitable use). At an operational level, international law offers a range of *tools and mechanisms for implementation* through concrete rules containing specific rights and duties as well as procedures that can be invoked in managing transboundary watercourses or resolving interstate conflicts.

The GWP network includes a significant number of transboundary watercourses, many of which are covered by functioning treaties. However, some of these agreements are incomplete, or fail to cover the entire basin, or still fail to materialise. Despite the existence of identifiable rules of customary law, cooperation appears to be best facilitated where there are agreements in place. This paper reviews current best practice and suggests that the opportunities for effective transboundary cooperation are enhanced where the following five core elements are addressed in transboundary water treaties – scope; substantive rules; procedural rules; institutional mechanisms; and dispute settlement. Where transboundary watercourse States agree on how these matters will be dealt with in their international water-related relations, the potential for effective cooperation is increased; this is further enhanced where the institutional mechanism that is established (i.e. River Basin Organisation; Meeting of the Parties, and so forth) is fully functional.

International law, through its very *raison d'etre* and functional application, aspires to facilitate transboundary cooperation so as to assist in achieving water security and the laudable goal of water for all.

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1. TRANSBOUNDARY WATER RESOURCES – THE CHALLENGE

We *recognize that people are at the centre of sustainable development and, in this regard, we strive for a world that is just, equitable, and inclusive, and we commit to work together to promote sustained and inclusive economic growth, social development, and environmental protection and thereby to benefit all.*
UN Resolution, The future we want.[1]

Transboundary[2] water resources contribute to the economic, social, and environmental well-being of most of the world's population and natural systems.[3] Despite calls for increasing cooperation to manage these shared resources, facilitating transboundary water cooperation in a world of sovereign nations continues to be one of the most serious challenges facing national governments, regional organisations, and the international community in general. Access to sufficient water of adequate quality can mean the difference between prosperity and poverty, welfare and ill-health, even death. Equity, ethics, and justice also play an important part in integrating peaceful management.[4]

The GWP's vision is for a "water secure world". Aligned to this aspiration and as part of its current strategy, the GWP has committed to "facilitating transboundary cooperation" noting:

"Surface and underground water do not respect political boundaries. This means that states must cooperate to manage water. They must share responsibilities for managing water, protecting water quality, managing environmental flows, and promoting harmony among states. In some cases, river basin organisations provide an institutional structure for functions such as coordinating decision-making, establishing water allocation mechanisms, reducing water pollution, and handling floods and droughts. Good national policies and plans are prerequisites for serious cooperation in transboundary waters, including shared aquifers that are often neglected. Taking the shared benefits approach, GWP will support regional processes and work with regional organisations and initiatives in support of cooperative processes to make shared waters become a force for regional economic development".

Source: GWP Strategy 2009-2103[5]

1.1 In Africa

Africa is home to most of the world's major transboundary watercourses, which cover more than half of its surface area and more than 90% of its

surface water resources. Yet Africa uses less than 4% of the water available and less than 10% of its hydropower potential.[6] The most important shared watercourses that traverse the continent include the Congo, Incomati, Limpopo, Niger, Nile, Okavango, Orange, Senegal, Volta, and the Zambezi. While many transboundary rivers are governed by multilateral agreements, including the regional instruments concluded under the Southern African Development Community (SADC),[7] there still exist regulatory gaps and cooperation within some of the transboundary river basins is slow or stalled. For example, despite the need for more active cooperation in the Nile River basin, it has reached an impasse, mostly because the participating countries are taking differing positions over the Nile Basin Cooperative Framework Agreement (CFA)[8] and especially its key 'water security' provision. The CFA defines 'water security' as "*the right of all Nile Basin States to reliable access to and use of the Nile River system for health, agriculture, livelihoods, production, and environment*" and provides "*that the cooperation management and development of waters of the Nile River System will facilitate achievement of water security and other benefits*" (Article 14). This provision represents the main stumbling block on the journey towards creating an all-inclusive and effective legal framework in the basin. Nevertheless, efforts to foster basin-wide cooperation continue within the Nile Basin Initiative under the auspices of the Nile Council of Ministers.[9]

1.2 In Asia

Some of the world's most utilised transboundary watercourses are located in Asia. They serve countries with huge populations, with great economic and developmental challenges, such as China, India, Bangladesh. They include rivers of the Aral Sea basin in Central Asia (shared by Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan), the Ganges-Brahmaputra river system, the Indus, and the Mekong. While most of the region's shared waters are managed on the basis of international treaties, cooperation across such vast basins with diverse political and economic interests continues to be a real challenge.[10] The numerous agreements concluded in the Aral Sea basin suffer from inadequate implementation, although regional institutional mechanisms play an important role in promoting joint activities. The on-going controversies over hydropower projects between upstream and downstream States,[11] and external involvement in transboundary water issues[12] significantly influence the way in which water resources of the basin are managed.

Some important Asian watercourses, such as the Mekong and Ganges rivers, still lack basin-wide legal frameworks. They are partially governed by sub-basin (the Agreement on the Cooperation for Sustainable Development of the Mekong River Basin – Mekong Agreement)[13] or bilateral treaties, such as the bilateral interim agreement on the Ganges River between India and Bangladesh on the Farakka dam,[14] the Indus Treaty between India and Pakistan[15] and all the agreements concluded by China. However, conflicts over water sharing hamper attempts to conclude more comprehensive agreements and stem from the desire to control supply and ensure demand, both upstream and downstream.[16] While there is great potential for trade-offs across the basins that could prevent possible conflicts, "*the time is ripe for these countries to proactively foster integrated regional cooperation based on international law and practices.*"[17]

1.3 In South and Central America

Significant and largely unregulated transboundary watercourses cross South America – the Amazon, La Plata, Orinoco – and Central America – Choluteca, Chiriqui, Grijalva, and Lempa.[18] Whilst there are examples of cooperation on some of these shared water bodies, such as the La Plata River, the great challenge for the two regions is to develop more basin-wide transboundary agreements and to effectively implement those already in place. The La Plata basin is a long-standing arrangement with growing cooperation across national borders. The agreement, signed in 1973 by Argentina and Uruguay covers the rivers Paranà, Río de la Plata, and the Guarani aquifer. Together they comprise the second largest river system in South America and the fifth largest in the world.[19] Recently, the five La Plata nations – Argentina, Brazil, Bolivia, Paraguay, and Uruguay – launched a regional, joint sustainable management programme to preserve one of the largest fresh water reserves in the world.[20]

1.4 In Europe

Numerous transboundary waterways criss-cross Europe. There is a long history of water-related treaties and substantial State practice in cooperatively managing shared water resources. One of the truly 'international' watercourses is the Danube River, which passes through ten countries and shares the basin with an additional nine countries. The Danube Commission is one of the most effective basin institutions in the world and plays a vital role in fostering joint efforts and activities involving most of the Danubian States.

Europe is the only geographical region that has a region-wide legal instrument covering transboundary waters – the 1992 United Nations

Economic Commission for Europe Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE Water Convention).[21] This, together with additional protocols and numerous guidelines and recommendations, constitutes a comprehensive and continuously evolving legal and juridical framework governing international cooperation. In 2003, the UNECE Water Convention was amended to permit accession by any Member of the United Nations upon approval by the Meeting of the Parties (MoP); entered into force 6 February 2013, this instrument will be open for States situated outside the UNECE region to become Parties. At the most recent MoP (Rome, 28 – 30 November 2012), there was unanimous agreement that the procedure for the accession of non-UNECE countries to the Convention be simplified, thus enabling accession, which could occur from the end of 2013. Support for this move is encouraged by United Nations Secretary-General Ban Ki-moon. This could extend significantly the reach of the UNECE Water Convention, which claims a recent 2011 China-Kazakhstan water quality agreement and 2008 China-Russian Federation agreement as part of its track record of success (The Water Convention: 20 years of successful water cooperation, 2012 UNECE document).

The EU Water Framework Directive (EU WFD) also applies to watersheds that primarily cross European inter-State borders.[22] Central and Eastern Europe are currently experiencing an upsurge of transboundary water treaty-making, and a new GWP initiative aims to enhance transboundary cooperation across this region.[23] But despite constantly expanding watercourse regimes (i.e. a new agreement on the Dniester – Cooperation in the Field of Protection and Sustainable Development of the Dniester River Basin – was concluded between the Republic of Moldova and Ukraine in November 2012 under the auspices of the UNECE Water Convention) and substantial State practice across Europe, there is still room for improvement with one observer noting a "*lack of coordinated planning, implementing, and assessment of impact in transboundary basins*".[24] However, the institutional mechanisms, especially under the UNECE Water Convention (Meeting of the Parties and sub-groups) and also under the EU WFD, have had a significant impact on operationalising cooperation across regional transboundary basins. This regional practice will be enhanced further with the recent establishment of an Implementation Committee (nine international experts elected by consensus to serve in a personal capacity) under the UNECE Water Convention, an innovation in this field aimed at rendering "practical case-tailored assistance to prevent water-related disputes and support Parties in

their efforts to implement the Convention" (http://www.unece.org/env/water/mop6.html).

1.5 International law – facilitating cooperation

So, how are cooperative processes enabled, and what role does international law play? Transboundary waters (surface and underground), which are shared by two or more countries with divergent and often conflicting needs and interests pose difficult and diverse challenges, especially when viewed through the prism of integrated water resources management (IWRM)[25] and the ultimate objective of attaining water security. However, increasing demand must not necessarily lead to conflict. It may even be seen as an opportunity for cooperation, as examples of regional integration reveal.[26]

Despite an abundance of academic writings and expert reports on transboundary water issues[27] critical knowledge gaps remain. In this paper we focus on how international law operates to facilitate transboundary water cooperation within the context of IWRM. The advent of the UN International Year of Water Cooperation in 2013[28] provides an ideal occasion to explore this aspect of cooperation as a key element of transboundary (international) water resources management.

We first examine the rules and practice of international law and how it can enhance transboundary water cooperation. We then present selected case studies that explore international water law in practice and assess how this affects transboundary cooperation. In closing, we identify lessons learned and the issues we still face.

2. INTERNATIONAL WATER LAW – RULES AND PRACTICE

"In these times of unprecedented inter-connection between States and peoples it is my sincere belief that a firm reliance on international law must underpin any and all future developments on the global stage."[29]

International law is a system of legal rules – norms and general principles, substantive and procedural rules – that govern inter-State relations in various areas of human activities such as international trade, maritime and outer space activities, environmental protection, as well as access to and use of transboundary natural resources.[30] Central to this body of legal rules are the fundamental principles set forth in the Charter of the United Nations (UN Charter),[31] codifying the legal foundation of the international community's collective commitment to promote global cooperation, regional peace and security, and advance the fundamental freedoms of all. The importance of the rule of law[32] in development and environment was recently emphasised in the UN Resolution "The future we want", the outcome document from the UN Conference on Sustainable Development, Rio+20.[33]

The use and protection of water resources shared by two and more countries are also governed by prescribed international legal rules. These legally binding norms can be found in numerous international treaties and are reflected also in rules of customary international law, which is based on State practice.[34] While international law is not the only instrument available to resolve transboundary water conflicts, it provides an over-arching framework for addressing a broad range of water-related challenges and concerns that span across scales, sectors, and disciplines (Figure 1). This illustrates the

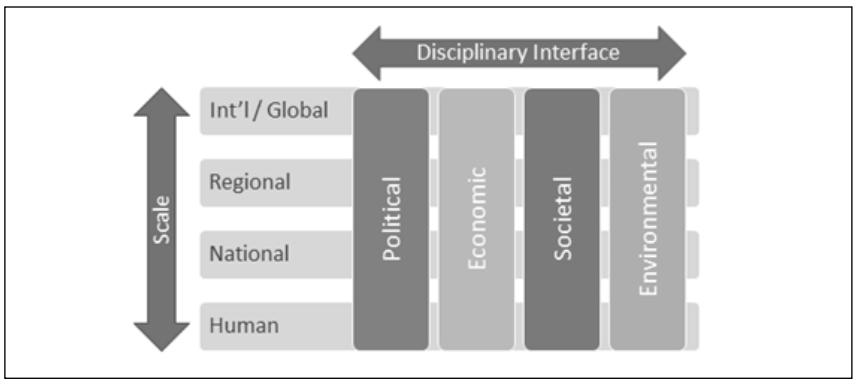

Figure 1 Water law within a context

important inter-connectivity of transboundary water resources management problems. Tackling the global water challenge, especially at international and regional levels, requires an integrated approach that takes into account diverse factors, within the changing context of the global community and the evolving structure of international water governance.[35]

We live in a world of ever-growing interdependence and inter-connectedness. *Our inter-dependence has grown beyond anyone's imagination in fact!* [36]
Apart from serving as a value system and consolidating an integrated approach to environment and development, international law is also to function as a concrete regulatory framework for co-operation between and action by all relevant actors.[37]

The 2012 UN meeting on "Water, Peace, and Security" highlighted the importance of finding ways to improve transboundary water resources cooperation and collaboration.[38] It particularly emphasised that since "*water resources could become a real source of manipulation and increasing instability*" and "*should be a priority in every nation's foreign policy and domestic agenda*", "*we need to work together to advance cooperation on shared waters.*"[39] While, unquestionably, the political will of national governments determines to a large extent the degree of cooperation across State borders, international law plays an important role through its prescription of the 'rules of the game' governing the conduct of individual nations and relations between them. The 'law of nations'[40] defines the limits of State sovereignty and provides the context for transboundary water resources cooperation.

2.1 International water law in practice

"If the daunting challenges now facing the world are to be overcome, it must be in important part through the medium of rules, internationally agreed, internationally implemented and, if necessary, internationally enforced." Lord Bingham [41]

The duty to cooperate is at the heart of the UN Charter, and the rules of international law governing transboundary water resources have evolved around the idea of cooperation.[42] To achieve this broad objective, numerous legally-binding and non-binding instruments on transboundary waters were adopted both within and outside the UN system. Among the most important global instruments are the 1997 UN International Watercourses Convention (UNWC)[43] and two recent resolutions adopted by the UN General Assembly, one on the Right to Water and Sanitation[44] and another related to

transboundary aquifers.[45] At the regional level, the two most relevant legal documents contributions are the UNECE Water Convention (soon to be open for universal accession) and the 2000 SADC Revised Protocol on Shared Watercourses (SADC Revised Protocol)[46] greatly influenced by the UNWC.

States have also concluded a large number of water-related agreements for sharing the same river or lake, or their drainage basins. But challenges remain. As UNESCAP observed – "*ambiguous water rights and allocation of increasingly scarce water resources has emerged as the principal cause of water conflicts… and the most important challenge lies in balancing the different uses of water and in managing their economic, social, and environmental impact.*"[47] In this context the role of the rule of law in managing transboundary water conflicts and building international cooperation deserves a closer look.[48]

The rule of law and the World Bank – Among many international institutions, the World Bank has been particularly active in promoting the rule of law in the area of sustainable development and natural resource use. In 2001, (then) President James Wolfensohn explained the direct link between the rule of law and poverty alleviation – "*There can be no good and clean government without respect for the rule of law, nor transparent and well-functioning financial markets, nor equitable and sustainable development … the rule of law needs to be improved in developing and transition countries to deal most effectively with three key dimensions of poverty, powerlessness, vulnerability, and lack of opportunity. Only with progress in all three areas will poverty reduction be possible. Only with poverty reduction will peace be possible.*"[49] Past president Robert Zoellick stated, "*The most fundamental prerequisite for sustainable development is building the rule of law and legal order, including respect for property rights*".[50] This approach is supported by the Bank's current president, Dr Kim, "*Let us lift our sights. Let us focus on the broader purpose of creating a world that bends towards greater justice, towards greater inclusion, and towards greater dignity for all, especially the poor and most vulnerable.*"[51]

The **rule of law** contributes to facilitating cooperation in transboundary water issues in three ways. It provides:

- A meta-framework governing relations involving sovereign States (law of nations, or international law in general)
- A platform for applying an integrated approach (across scales, sectors, and disciplines) and
- A mechanism for implementing the rules of the game (substantive and procedural legal norms applying to specific watercourses or water-related activities).

As a **meta-framework for international relations,** international water law provides an identifiable corpus of rules of treaty and customary law that determine the legality of State actions with respect to water resources that cross national boundaries. International water law provides a **platform for identifying and integrating** the legal, scientific, and policy issues relevant to the use of transboundary watercourses (such as traditional reference to "all relevant factors and circumstances" in determining equitable use). At an operational level, international law offers a range of **tools and mechanisms for implementation** through concrete rules containing specific rights and duties as well as procedures that can be invoked in managing transboundary watercourses or resolving inter-State conflicts. Each of these functional facets of international water law is elaborated in more detail through the examination of State practice.

2.2 Treaties and State practice

More than 400 treaties apply to various aspects or forms of transboundary water resources.[52] These international agreements provide operational frameworks for inter-State cooperation mostly involving States sharing the same watercourse or drainage basin. In addition to treaty law, rules of customary international law confer some general legal entitlements and impose obligations on watercourse States. The most important legal rule of this body of law is the principle of "equitable and reasonable use" which encompasses both a right and a duty to use an international watercourse in an equitable and reasonable manner. This fundamental legal principle is linked directly to the general duty to cooperate – the cornerstone of modern international law – and an obligation to take necessary measures to prevent causing significant transboundary damage. These and more specific rules are usually implemented through procedural mechanisms and joint institutions, such as river basin organisations, commissions, or other joint bodies. The latter play a particularly important role in the peaceful daily management of shared transboundary water resources. So how does this system work in practice?

The only universal instrument in this area at present is the UNWC, adopted by the UN General Assembly in May 1997 following close to 30 years of codification efforts within the UN. It provides a useful framework for reviewing State practice. It is expected that the UNWC will soon enter into force.[53] A widespread international public campaign,[54] coupled with the endorsement of the UN Secretary General's Advisory Board on Water and Sanitation[55] and the recent UN Round-table on Water Peace and Security (2012), makes it only a matter of time before this goal is finally achieved.

Regardless of its current status, the UNWC is a valuable reference point as a framework instrument setting out the basic rights and obligations of States for managing shared water resources.[56] The Convention has, for example, provided inspiration for the Mekong Agreement and the SADC Revised Protocol. In the absence of regional or basin-wide agreements, the UNWC provides a legal basis for cooperation (substantively and procedurally) and guidance for States in their practical interactions. Another important instrument, soon to become open for universal endorsement is the UNECE Water Convention (now with 39 Parties), which provides an approach that complements the UNWC in a number of important ways, discussed in more detail below. Each of these significant framework agreements must be viewed as part of a larger body of multilateral agreements that regulate the uses of transboundary water resources.[57]

2.3 Core elements of transboundary watercourse regimes

There are **five core elements** for analysing the operation and effectiveness of transboundary water management – scope, substantive rules, procedural rules, institutional mechanisms, and dispute settlement (Figure 2). The extent to which these elements are reflected and developed in transboundary watercourses agreements or management regimes often determines, in large measure, the efficiency of the cooperation realised in practice.

Scope – This concerns the geographical and functional definition of the transboundary water resource to which a particular legal instrument or legal regime applies. Given that most watercourse agreements have the character of "territorial" treaties, the "scope" is an important element of any such agreement. Scope usually determines the geographical and hydrological parameters or limits of the treaty's application by defining both the water resources governed and the States eligible to participate. Thus, a well-

Key Elements	Details
1. Scope	• Legal reach (what waters?) • Definitions (watercourse; uses) • Parties (States RIEOs)
2. Substantive Rules	• Legal duties & entitlements (equitable and reasonable utilisation; due diligence; protection) • Rules of substance (generalor precise)
3. Procedural Rules	• Rules of procedure (duty to cooperate as bridge) • Notification/exchange of information
4. Institutional Mechanisms	• Joint bodies (RBOs) • Conference of the Parties (MoP) • Organisations/organs (Ministerial level; other)
5. Dispute Settlement	• Dispute avoidance (consultation) • Dispute settlement (Art. 33 UN WC; other) • Compliance verification (reporting; facilitation)

Figure 2 Legal analytical framework for transboundary water resources management

developed watercourse regime should provide a clear definition of the waters covered using either geographic or hydrological criteria. It can also define the types of uses or activities regulated by the agreement. State practice reveals a variety of approaches in determining the scope; for example, it may include or exclude ecosystems, groundwater, and a range of water resources.[58]

UNWC definition of scope: 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" (Art. 1). The watercourse is defined as "a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus" (Art. 2).

UNECE Water Convention definition of scope: "'Transboundary waters' means any surface or ground waters which mark, cross or are located on boundaries between two or more States; wherever transboundary waters flow directly into the sea, these transboundary waters end at a straight line across their respective mouths between points on the low-water line of their banks" (Art. 1(1)).

Confined aquifers are not included in the UNWC; it is a topic that the UN continues to work on.[59] However, there are some treaties that apply also to transboundary aquifers, such as the UNECE Water Convention, which includes in its scope "*any surface or groundwaters which mark, cross, or are located on boundaries between two or more States*"; the UNECE has also elaborated model provisions on transboundary groundwaters through the integrated management of surface waters and groundwaters. Another approach to scope has been adopted under the ILA Helsinki Rules,[60] which uses the the term "drainage basin", terminology that some consider supports a more ecosystem-inclusive methodology.[61]

Substantive rules – These rules comprise legal norms – mostly contained in international treaties – that establish substantive, or material, rights and obligations of States using the same watercourse. These rules may vary depending on the purpose and nature of a particular agreement. The most important establish legal entitlements to use transboundary water resources. In particular, under both customary international law and treaty law, transboundary watercourse States are entitled to "*equitable and reasonable use*" of their shared water resources. This focus on the *use* of water, as opposed to a concern only with the physical apportionment of water, illustrates the breadth of this rule, which was codified as Article 5 of the UNWC.[62]

The UNWC sets forth a non-exhaustive list of factors to be considered when evaluating equitable and reasonable use – all relevant factors are to be considered together and a conclusion to be made on the *basis of the whole*.[63] Thus, all relevant social, environmental, economic, and hydrographic factors are to be identified, given due weight, and evaluated together in order to determine whether the proposed, or even existing, use is equitable and reasonable – and thus lawful or unlawful.[64] Where there is not enough water to meet all needs and a "*conflict-of-use*" arises; Article 10 of the UNWC provides that *"vital human needs"* should be given a priority.[65] Research has suggested that *"vital environmental needs"* might also be afforded priority in such a situation.[66] Two other key substantive rules are enshrined in the UNWC – the duty not to cause significant harm,[67] and the duty to protect and conserve water-related ecosystems.[68]

Substantive rules contained in different international water agreements impose either obligations of conduct, which establish the parameters of lawful or acceptable behaviour of States, or obligations of result. The latter are aimed usually at achieving concrete goals, such as attaining a water quality objective, eliminating or reducing pollution to a certain level, or allocating agreed volumes of water or benefits of water use between the parties. Substantive provisions of water sharing or project-related agreements may be quite specific. They may, for example, provide for different mechanisms of water allocation and benefit sharing. Substantive rules continue to evolve as new transboundary water-related challenges present themselves, such as prevention and control of various types of pollution, ecosystem preservation and protection, and realising the human right to water and sanitation.[69]

Under the UNECE Water Convention, the governing substantive rule expressed in Art. 2 reads as follows, "The Parties shall take all appropriate measures to prevent, control and reduce any transboundary impact" and transboundary impact is defined as "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. Such effects on the environment include effects on human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; they also include effects on the cultural heritage or socio-economic conditions resulting from alterations to those

factors" (Art. 1 (2)). This focus on limiting transboundary impact, defined in the broadest possible terms, devises a legal framework based on three pillars that impose duties to (1) Prevent, control and reduce transboundary impacts: (2) Ensure reasonable and equitable use; (3) Cooperate through agreements and joint bodies. These substantive norms are elaborated upon more fully within the convention, through the actions of the Meeting of the Parties and also through significant state practice.

Procedural rules – These provide the practical means for implementing the substantive rules and establish an operational framework for the continuous management of a watercourse. The distinction between the "substantive" and "procedural" obligations is made mostly for analytical purposes in order to better understand treaty structure and requirements. This does not mean that "procedural" obligations are less binding than obligations characterised as "substantive", a fact emphasised in the recent International Court of Justice (ICJ) decision on the Pulp Mills case involving Argentina and Uruguay – Argentina v. Uruguay Case (2010) Concerning Pulp Mills on the River Uruguay.[70]

Transparency, predictability, and enforceability of legal rules are enabled through applying the rules of procedure.[71] For this the UNWC offers a model procedural framework which is closely followed by many recently adopted agreements, such as the SADC Revised Protocol. The suite of procedural rules set forth in Part III of the UNWC provides for information exchange,[72] notification,[73] and consultations in the event of new uses.[74] The majority of specific watercourses treaties include such provisions as well as important operational elements of transboundary watercourse management regimes. Under the UNECE Water Convention, the rules of procedure are different for Parties and Riparian Parties (Part II), with the latter having more elaborate duties, ranging from the requirement to conclude agreements that give effect to the principles of the Convention, to exchanging and evaluating data, elaborating joint monitoring programmes related to water quality and quantity, establishing early warning and alarm procedures and participating in the elaboration of environmental impact assessments (Art. 9). The duties and obligations on Riparian Parties is quite extensive (Part II) and includes provisions on consultations (Art. 10), joint monitoring and assessment (Art. 11); common research and development (Art. 12); exchange of information (Art. 13); warning and alarm systems (Art. 14); mutual assistance (Art. 15); and public information (Art. 16).

Institutional mechanisms – Transboundary water agreements generally establish joint bodies or arrangements designed to serve as a focal point of inter-State cooperation for the day-to-day management of shared water courses. Such international joint bodies constitute an essential component of many modern watercourse regimes. They are used as important tools for coordinating States' efforts to manage water courses, especially by reconciling competing interests and identifying opportunities for mutually beneficial activities. In addition, institutional mechanisms can contribute to preventing and resolving disputes, through technical expertise; a potentially contentious issue could be reviewed internally with recommendations on how to address it, before the matter turns into an inter-State controversy requiring formal dispute settlement.

Establishing and using joint mechanisms are regarded as the most important facet of cooperation on transboundary waters. The UNWC encourages watercourse States to consider creating joint bodies in order to facilitate cooperation on relevant measures and procedures.[75] These provide organisational structure, capacity, and human resources necessary for information exchange and consultations, as well as a conduit for dispute prevention and dispute settlement.[76] Practically all recent transboundary watercourses agreements establish joint bodies in a variety of formats.[77] While the majority of these mechanisms are basin-specific commission or joint bodies, there are more general institutional frameworks, usually provided for in global, regional or sub-regional arrangements (GWP/INBO Handbooks I & II).

Under the UNECE Water Convention the central place belongs to the Meeting of the Parties and its subsidiary bodies, which have been instrumental in implementing the regional agreement, with significant state practice under these institutional arrangements. The MoP meets regularly and agrees the work plan under the Convention; at its most recent meeting (Rome, November 2012) the forward-looking programme includes continued attention to the implementation and on accession to the Convention, a focus on adaption to climate change in transboundary basins, new work on quantifying the benefits of transboundary cooperation, a thematic assessment on the water-food-energy-ecosystems nexus and activities related to the opening of the Water Convention and enhanced cooperation with GEF and UNESCO as global partners.

Another example of the role of institutional mechanisms is the Human Rights Council, which was designated as the organ responsible for oversight of the

UN Resolution on the Human Right to Water and Sanitation.[78] Along with formal institutional mechanisms, civil society plays an increasingly important role in the overall governance structure.[79]

Dispute settlement –The efficiency of legal regimes governing transboundary watercourses is usually enhanced where there is a system for monitoring compliance[80] and dispute resolution.[81] In line with the fundamental precepts of the UN Charter,[82] States are obligated to resolve their disputes by peaceful means, and have a wide choice of ways, both diplomatic and judicial, at their disposal.[83] Under the UN Charter international disputes can be settled through "*negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means.*"[84] States have used all these methods to resolve water disputes but the most common recourse is to negotiations, good offices, and fact-finding, supported by the use of joint bodies and regional institutions.[85]

Article 33 of the UNWC provides a list of options available to States in order to settle their possible controversies.[86] Where the matter is not resolved by using traditional means of settlement, the parties may resort to compulsory fact-finding.[87] The procedure resembles conciliation but does not require the consent of both parties to establish a fact-finding commission – this can be done at the request of just one State. The Fact-finding Commission can make "s*uch recommendation as it deems appropriate for an equitable solution of the dispute.*"[88] Although this mechanism has not yet been tested in practice, it appears well suited to the particular nature of water-related disputes. However, the parties to the dispute are not bound by the commission's recommendation and may still invoke compulsory dispute settlement procedures, such as arbitration or adjudication. A less detailed approach has been adopted under the UNECE Water Convention, where Article 22 leaves it open to the Parties to select their preferred dispute settlement mechanisms, while encouraging negotiation in the first instance and where this is unsuccessful providing recourse to the International Court of Justice or to arbitration. A number of water-related disputes have been brought before the ICJ and arbitral tribunals and these provide guidance on how contested issues are resolved.[89] But, consistent with the general rules of international law, disputes cannot be heard without the consent of States.

"The water problems of our world need not only be a cause of tension; they can also be a catalyst for cooperation… If we work together, a secure and sustainable water future can be ours." Kofi Annan [90]

3. TRANSBOUNDARY COOPERATION IN PRACTICE

"Today cooperation arrangements are moving increasingly from a single focus on sharing waters to the sharing of multiple benefits from more optimal water arrangements within basins." [91]

International water law serves as a platform for facilitating transboundary cooperation through establishing transparent and predictable rules of engagement. It provides a normative and institutional framework within which various aspects and drivers that affect the potential for cooperation can be properly accommodated – issues of geography, resource availability and variability, governance, inter-State relations and power asymmetries, trade, colonial heritages, and diverse political regimes.[92] International water law addresses these matters at two levels.

At a **macro level** international water law provides the legal parameters for State action. In practice this means operating within the bounds of the law of nations, which requires the world's shared water resources to be peacefully managed. The rules of international law provide a *meta-framework for inter-State relations,* with legal remedies available in the event of unlawful behaviour, such as a breach of the rules. Generally, States are engaged in developing and managing their shared transboundary water resources in accordance with certain legal rules, supported by the threat of adverse consequences in the event of their violation.

In devising legal frameworks, States negotiate around those issues related to the most appropriate geographical and functional scope, substantive rules, procedures, institutional mechanisms, and means of dispute settlement. These are included in, and constitute elements of, a watercourse treaty, which forms the foundation of a legal regime. Identifying the relevant factors and circumstances that must be addressed entails integrating a range of legal, scientific, and policy considerations. International law serves as *a platform for integration,* which requires identifying, articulating, and incorporating the relevant factors and circumstances particular to the specific watercourse management regime, informed by science and policy.

At a **micro-level** international law provides a framework for implementing agreed rules and provides mechanisms for monitoring and ensuring national

compliance. The substantive and procedural rules, institutional bodies, and means of dispute settlement taken together establish *a mechanism for operationalising the established legal regime*.

The governing rule of equitable and reasonable use defines the ultimate objective of the regime as well as the context for implementation.

Application of the rule of equitable and reasonable use

The UNWC, as the principal universal instrument on water use allocation, offers guidance. Article 5 provides:

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

Watercourse States shall participate in the use, development, and protection of an international watercourse in an equitable and reasonable manner. Such participation includes both the right to utilize the watercourse and the duty to cooperate in the protection and development thereof, as provided in the present Convention.

Article 6 provides guidance on how the rule of equitable and reasonable use is to be implemented. – "*all relevant factors are to be considered together and a conclusion reached on the basis of the whole*". This approach follows the ILA Helsinki Rules, which introduced the notion of equitable and reasonable use and also included a methodology for implementing this rule. The non-exhaustive list of indicative factors to be considered in Article 6 is open-ended and covers the vast range of circumstances that need to be examined where new or increased uses are to be considered. Importantly, the in-built flexibility of the rule, common for international law, provides enormous potential for including new and changing circumstances that affect the use of shared water resources. This should be seen as a strength and not a weakness of the rule.

The UNECE Water Convention provides that "the Parties shall take all appropriate measures to ensure that transboundary waters are used in a reasonable and equitable way, taking into particular account their transboundary character, in the case of activities which cause or are likely to cause transboundary impact" (Art. 2(2)); and further elaborates specific examples of what this entails.

This norm fosters a holistic and inclusive approach to transboundary water resources management, focusing on *beneficial use-allocation* within a basin-wide context. The notion of benefits-sharing finds its legal foundation in this rule of international law – equitable and reasonable use and participation encourages watercourse States to cooperate in optimising and equitably sharing the beneficial uses (goods, products and services) connected

directly or indirectly with the watercourse.[96] State practice supports such an approach. Examples include, the Columbia River Treaty (downstream benefits shared by Canada and the USA)[97] and the Mekong Agreement.[98 99]

The rule of equitable and reasonable use and participation is supported by the duty to cooperate (Article 8)[100] and the set of procedural rules contained in Part III of the UNWC. The operational mechanisms needed to facilitate cooperation – procedural rules, institutional mechanisms, and means of dispute settlement – are reflected consistently in treaty and State practice.[101]

Transboundary Water Disputes – examples of third-party dispute settlement

A number of transboundary water disputes demonstrate how watercourse regimes work in practice.[102] These include the Territorial Jurisdiction of the International Commission of the River Oder *(United Kingdom, Czechoslovakia, Denmark, France, Germany, Sweden* v. *Poland; PCIJ, 1929)*;[103] the Lake Lanoux Arbitration (*France* v. *Spain*; ICJ, 1957);[104] the Case Concerning the Gabcíkovo-Nagymaros Project (*Hungary* v. *Slovakia*; ICJ, 1998);[105] the Dispute Regarding Navigational and Related Rights (*Costa Rica* v. *Nicaragua;* ICJ, 2008);[106] the Case Concerning Pulp Mills on the River Uruguay (*Argentina* v. *Uruguay*; ICJ, 2010);[107] and the Indus Waters Kishenganga Arbitration (*Pakistan* v. *India;* PCA, 2010).[108] The Court in the Gabcíkovo-Nagymaros case stated, "*Modern development of international law has strengthened the principle expressed in the River Oder case that 'the community of interest' in a navigable river becomes the basis of a common legal interest or non-navigational uses of international watercourses*".[109] This community-of-interest approach provides the foundation for the concept of hydro-solidarity which is now emerging in response to global water security.[110]

4. CASE STUDIES

"The simple fact is that the importance of water to humans, individually and in organised groups, had led them to seek stability in their fluvial relations through the development and acceptance of customs, as well as through more formal acts such as agreements."[111]

We now examine how all of this translates into practice using five case studies – the Zambezi, the Niger, the Mekong, the Drin (in the Mediterranean region), and the Danube. These were selected from across the GWP network and are used here to examine how legal instruments contribute to fostering cooperation.

We consider each case within the context of the five core elements – scope, substantive rules, procedural rules, institutional mechanisms, and means of dispute settlement – to evaluate the extent to which these are dealt with in each watercourse and how this affects cooperation.

4.1 The Zambezi River

Eight countries – Angola, Namibia, Botswana, Zimbabwe, Zambia, Tanzania, Malawi, and Mozambique – share the Zambezi river basin, the fourth largest in Africa. Approximately 30 million people live in the basin, which has its headwaters in Zambia. The main river channel forms the borders between Zambia and Zimbabwe, and Zambia and Botswana before reaching the ocean in Mozambique.

Formal cooperation started when Kariba dam was built in the 1950s and Portugal, the colonial power in Mozambique at that time, Zambia, and Zimbabwe signed an agreement to use the Zambezi.[112] In 1987 Zambia and Zimbabwe established the Zambezi River Authority as a body responsible for cooperating and managing Kariba dam.[113]

At present the Zambezi River is covered by a patchwork of legal instruments nested under the over-arching SADC Revised Protocol, which sets the framework for transboundary water resource cooperation across the SADC region. The SADC Revised Protocol promotes a basin-wide approach to water management, encouraging "close co-operation for judicious, sustainable and co-ordinated utilisation of the resources of the shared watercourses in the

SADC Region".[114] It encourages SADC member States to enter into specific basin-wide agreements, which is fully consistent with the approach promoted by the UNWC and rules of customary international law.[115]

Recognizing the importance of the basin-wide management approach, the riparian countries and SADC initiated the Zambezi Action Plan Project, which established a river basin organisation through the Agreement on the Establishment of the Zambezi Watercourse Commission (ZAMCOM Agreement).[116] This Agreement, initially signed in 2004 by Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia, and Zimbabwe came into force in 2011 following ratification by all signatories except Zambia.

The Agreement establishes the Zambezi Watercourse Commission (ZAMCOM) detailing the remit of ZAMCOM and introduces substantive and procedural rules together with provisions for dispute settlement. According to the ZAMCOM Agreement, "*the objective of the Commission is to promote the equitable and reasonable utilisation of the water resources of the Zambezi Watercourse as well as the efficient management and sustainable development thereof.*"[117] The ZAMCOM comprises three governing bodies – the Council of Ministers, the Technical Committee (ZAMTEC), and the Secretariat. Botswana hosts the Interim ZAMCOM Secretariat.

The ZAMCOM provides a platform for on-going discussions and negotiations on issues relevant to the management of the Zambezi, including flood mitigation, climate change adaptation, joint infrastructure development and management, and environmental protection. The first meeting of ZAMTEC was convened in November 2012 and included representatives from all eight watercourse countries, including Zambia.

However, the reluctance of Zambia, as the largest riparian on the Zambezi River, to ratify the ZAMCOM Agreement raises serious challenges for effective cooperation across the basin and may compromise the ZAMCOM's ability to fully execute its mandate. A number of reasons have been given for Zambia's refusal – from lack of agreement by its local stakeholders, to claims that Zambia sought explicit water allocation entitlements under the arrangement.[118] Zambia plans to build large-scale irrigation and hydroelectric infrastructure to meet its growing water and electricity demands, and some Zambian authorities believe that the ZAMCOM Agreement poses structural obstacles to these projects.[119] Nonetheless, the Zambezi riparian countries, including Zambia, continue to cooperate on an informal basis on issues of

mutual interest including infrastructure and flood control.[120] Yet, such ad hoc arrangements, while generally contributing to building regional trust, are far from ideal when compared with a basin-wide approach agreed under the treaty.

A recent Multi-Sector Investment Opportunities Analysis, conducted by the World Bank, examined development scenarios for growth-oriented investments in hydropower, irrigation, and tourism across the Zambezi basin and proposed a suite of unilateral, bilateral, and multilateral investment opportunities.[121] The assessment suggested that investing jointly in a hydropower dam in one country might yield higher returns than comparable investments by individual countries. The report determines that "*The economic benefits of increased hydropower production are substantial, and the associated investments are viable …It is clear that cooperation can play a significant role in maximizing the benefits that can be expected from the investments. Even without further substantial investment, cooperation among the riparian countries has the potential to offer substantial benefits while allowing the region to postpone some investments in new infrastructure while maintaining the Basin's long-term sustainability.*"[122] However, despite the obvious economic advantages, such investments are unable to proceed without agreed legal instruments that identify and regulate the entitlements and undertakings.

The overarching framework of SADC, the SADC Revised Protocol, and the ZAMCOM Agreement each provide important opportunities for building cooperation across the Zambezi River basin. The Multi-sectoral Investment Opportunities, if carefully developed further as part of the Zambezi Strategic Plan within the existing legal framework, would provide a significant catalyst for moving forward with the ZAMCOM Agreement as a legal platform for operational engagement on the proposed major projects.

Examining the ZAMCOM Agreement through the prism of the five core elements suggests that there remain outstanding issues related mainly to Zambia's reluctance to adopt the instrument (Table 1). However, Zambia's recently enacted Water Act includes a number of important principles, including "*water resources shall be managed in an integrated and sustainable manner*."[123] This national approach, by logical extension, could influence Zambia's attitude to cooperation at a regional level. Also Zambia's agreement to attend the first meeting of ZAMTEC (November 2012) and its endorsement of the SADC Revised Protocol provided encouraging signs.

Table 1 – The 2004 ZAMCOM agreement

Legal Framework	Details	Additional information
Scope	"Zambezi Watercourse" means the system of surface and ground waters of the Zambezi constituting by virtue of their physical relationship a unitary whole flowing normally into a common terminus, the Indian Ocean.	Almost identical to the UNWC definition of watercourse. (An indicative topographical map of the Zambezi Watercourse is contained in Annex 1 to the Agreement). Zambia is not a party.
Substantive rules	The Zambezi Watercourse shall be managed and utilized in an equitable and reasonable manner. (Art. 13) Member States shall in their respective territories utilize the Zambezi Watercourse in an equitable and reasonable manner with a view to attaining optimal utilization thereof and benefits therefrom consistent with adequate protection of the Zambezi Watercourse. (Art. 14) Member States shall individually and jointly take all precautionary and preventive measures in the utilization of the resources of the Zambezi Watercourse so as not to cause significant harm to the Watercourse nor to any Member State, including harm to human health and safety. (Art. 14)	"Equitable and reasonable utilisation (ERU)" means equitable and reasonable utilisation as provided for under Article 3 (7)(a) and (b), and Article 3 (8)(a) and (b) of the SADC Revised Protocol; The rules of application of ERU shall be developed by the Technical Committee as provided for under Article 10 (1) (c).
Procedural rules	A Member State planning any programme, project or activity with regard to the Zambezi Watercourse or which may adversely affect the Watercourse or any other Member State shall forthwith notify the Secretariat thereof and provide the Commission with all available data and information with regard thereto. (Art. 16)	Regular exchange of information (Art. 15)
Institutional mechanisms	Zambezi Watercourse Commission (Art. 3) comprised: (a) The Council of Ministers; (b) The Technical Committee; and (c) The Secretariat.	The objective of the Commission is to promote the equitable and reasonable utilization of the water resources of the Zambezi Watercourse as well as the efficient management and sustainable development thereof. (Art. 5)
Dispute settlement	Art. 21 – "shall expeditiously enter into consultations and negotiations in the spirit of good faith and equity with a view to arriving at an amicable settlement."; The Council may, where appropriate, make recommendations to the parties to the dispute with a view to arriving at an amicable settlement thereof; "If the parties to the dispute have not arrived at a settlement through the means provided for in paragraphs (1) and (2) of this Article, the dispute may, unless the parties to the dispute agree on another means of settlement, be brought before the Tribunal by way of an agreement between the Member States which are parties to the dispute or by way of a reasoned and documented petition on the part of one or more of the parties to the dispute.	In the event of any Member State failing to fulfil its obligations under this Agreement, such Member State shall forthwith, and in any event no later than thirty (30) days after such failure, send written communication to the Secretariat explaining the failure and setting forth the reasons therefore, including any measures taken to remedy the failure. (Art. 20) The Council may request the Tribunal to give an advisory opinion on the utilization, development, protection and conservation of the Zambezi Watercourse. (Art. 22)

4.2 The Niger River

The Niger River is the third longest river in Africa (4,200 km) and the largest waterway in West Africa with its source in the Fouta Djallon highlands in Guinea. The river passes through Mali, forms part of the border between

Benin and Niger, flows through Nigeria and discharges into the Gulf of Guinea, west of Port Harcourt. Tributaries extend the basin into Burkina Faso, the Ivory Coast, and Cameroon.[124]

Cooperation in the Niger Basin commenced in the 1960s, predating most other transboundary rivers in Africa. [125] The Preamble to the 1963 Act of Niamey[126] sets out the Parties' desire to guarantee the freedom of navigation[127] on the entire Niger system and to ensure "*equality of treatment to those who use it*".[128] Article 2 defines the term "utilization"[129] and recognizes the sovereign equality of the basin States to use the Niger. Specifically it provides: "*The utilisation of the River Niger, its tributaries and sub-tributaries, is open to each riparian State in respect of the portion of the River Niger basin lying in its territory and without prejudice to its sovereignty rights in accordance with the principles defined in the present Act and in the manner they may set forth in subsequent agreements*".[130]

The Niger River Commission (NRC) was established in 1963 to coordinate navigation activities. The Agreement concerning the NRC and the Navigation and Transport on the River Niger of 1964 (the "1964 Agreement")[131] complement the 1963 Act of Niamey. The NRC comprised nine Commissioners representing the member States[132] and had powers that might be characterized as both broad (in scope) and limited (in terms of effect).

The 1964 Agreement was modified substantially by subsequent amendments and, most importantly, by the Convention Establishing the Niger River Basin Authority of 1980 (the "1980 Convention"),[133] signed by the nine States. The Niger Basin Authority (NBA)[134] replaced the Niger River Commission and has a broader mandate. Its general task is "*to promote cooperation between the member States and to ensure an integrated development of the Niger Basin in all fields through the harnessing of its resources, particularly in the fields of energy, hydraulics, agriculture, animal husbandry, fisheries and farming, forestry and forest resources, transport and communications, and industry*".[135] The NBA is responsible for the "*harmonization and coordination of national development policies to ensure an equitable determination of the national limits*" of the system's uses.[136] Its functions include regulating water levels, flood control, preventing and controlling droughts, as well as environmental protection and preservation measures. The 1980 Convention generally espouses an integrated approach to basin development, but this goal is attained more through the implementation of the NBA mandate than substantive provisions contained in the treaty.

Thus, the overall purpose of a series of agreements was to create an institutional mechanism to facilitate cooperation for basin-wide development.[137] The Revised Convention on the Niger Basin Authority of 1987[138] replaced the 1980 Convention but follows many of the same provisions.

In 2004, the Niger States adopted the Paris Declaration for developing and implementing a Shared Vision. The on-going regime-building process includes a Development and Strategic Action Plan, an associated Investment Programme, and a Niger River Basin Water Charter, endorsed by Heads of States in 2008. This instrument supports the sustainable, equitable, and coordinated use of water resources and incorporates many of the provisions of the UNWC. Building on this, in 2011 during the forum "*Solidarity for water in the River Niger Basin countries*" the Niger basin States adopted the Bamako Declaration containing a set of recommendations aimed at improving and strengthening inter-State water-related collaboration. The Bamako Declaration also called for the ratification of the UNWC.[139] This concerted move demonstrates the unquestionable relevance of this instrument in the regional context and its need for a more comprehensive regime including substantive and procedural rules.

The water management legal regime, which has evolved over the past 50 years, while reflecting all five key elements (Table 2), is not without gaps and problems. This explains recent calls for a more comprehensive agreement. Despite the recent history of basin-wide engagement across the Niger, there are signs of increased potential for conflict arising out of increased stress from climate change impacts and water management practices (see Table 2, next page).[140]

4.3 The Mekong River

The Mekong River Basin drains an area of some 800,000 km^2 in six States (Laos, Thailand, China, Cambodia, Vietnam, and Myanmar), stretching some 4,200 kilometers from its headwaters in the Tibetan highlands to its discharge into the South China Sea. It is the second largest river in eastern Asia and the eleventh longest in the world. It provides important resources for an agrarian-based population exceeding 30 million people.

In 1995, despite considerable diversity across the basin but based on the existing cooperative framework and practice, the four lower riparian States (Cambodia, Laos, Thailand, and Vietnam) concluded the Mekong

Table 2 – 1987 Convention creating the Niger Basin Authority

Legal Framework	Details	Additional information
Scope	River Niger Basin	
Substantive rules	The Niger Basin Authority is responsible under Art. 3to promote cooperation among Member States and in all areas of energy, water, agriculture, livestock, fishing and fisheries, forestry and forestry exploitation, transportation, communications, and industry.	Current projects of the NBA focus on the control of floods and drought, enhancing river navigation, securing agricultural and power production, and combating desertification. Move toward agreeing substantive rules in new agreement consistent with UNWC as outlined in the draft Niger Basin Charter, which appears on the NBA website.
Procedural rules	The member states are obliged to inform the Executive Secretariat on all projects and works that they wish to undertake within the basin. The NBA informs the member states on a permanent basis on any important development.	
Institutional mechanisms	The Summit of Head of States and Government The Council of Ministers The Technical Committee of Experts The Executive Secretariat The functions of the NBA set out in Art. 4 can be summarized as follows: • Harmonizing and coordinating the national policies of the member states. • Preparing and implementing an integrated development plan for the basin. • Promoting and participating in works and projects of common interest. • Assuring the control and regulation of all forms of navigation on the Niger River, its tributaries, and sub-tributaries. • Mobilizing financial resources for studies, works, and projects	The Summit of Heads of State and Government of the Authority is the supreme body of guidance and decisions. It is composed of Heads of State and Government or their duly authorized representatives. The Council of Ministers of the Authority is the Supervisory Body of the Authority. It is composed of Ministers or their duly authorized representatives on a one vote per Member State The Technical Committee of Experts is composed of representatives of Member States. It is mandated to prepare the sessions of the Council of Ministers and the reports and recommendations to the Council of Ministers. The Executive Secretariat is the statutory body of the NBA
Dispute settlement	Art. 20 Any dispute that may arise among the Member States over the interpretation and/or implementation of this Convention shall be amicably settled through direct negotiation. In the event of failure to settle such disputes, the matter shall be referred to the Summit by a party to such disputes and the decision on the same shall be final.	Negotiation; final decision by the Summit.

Agreement. One of the main objectives of this instrument is to achieve "*the full potential of sustainable benefits to all riparian countries and the prevention of wasteful use of Mekong River Basin waters*".[141] Basin planning is central to the Mekong Agreement as it requires the members to "*cooperate in the formulation of a basin development plan*".[142] The Mekong Agreement continues to influence development across the basin. China and Myanmar participate as observers and dialogue partners under the Agreement.

The Mekong Agreement covers all five legal elements, incorporating among its substantive provisions the rule of equitable and reasonable use, establishing advanced procedures, and an institutional mechanism in the form of the Mekong River Commission (MRC). The Agreement identifies goals that form the functional focus of the organisation including establishing and maintaining minimum flows, reviewing proposed water uses, and formulating a Basin Development Plan.

The Mekong legal regime has evolved through adopting additional protocols and arrangements to support the more effective implementation of the Agreement. While it provides for notification and prior consultations, which aim at arriving at an agreement by the joint committee,[143] these general provisions are further elaborated through supplemental legal instruments, such as the Procedures for Notification, Prior Consultation and Agreement, and Guidelines on Implementation of the Procedures for Notification.[144] Parties use this mechanism to jointly review any proposed development project with the aim of reaching a consensus on the way forward.[145] For example, it was employed to review the proposed Xayaburi project, [146] though a consensus remains elusive.[147] It has proved to be a sensitive issue and remains unresolved at present.[148] Although dam construction was initially suspended,[149] it appears now to be going ahead.[150] The MRC has provided a summary of the Xayaburi dam consultation.[151]

Nevertheless, the Mekong legal regime is unquestionably one of the most effective multilateral cooperative frameworks for water resources management in this region. Some of the latest achievements were noted at the MRC meeting in December 2011.[152]

The Mekong Agreement provides for possible inter-State controversies over water use. It is envisaged that where a dispute arises, the MRC would serve as a first-stop to resolve the issue. Only if it is unable to resolve the dispute within a timely manner would the matter go forward to negotiation among national governments, mediation, and other means of dispute settlement.

Despite some recent controversies, such as the Xayaburi dam, international donors continue to support cooperation on the Mekong. In 2012, the World Bank committed US$8 million over a 5-year period to the MRC to promote enhanced transboundary management and aimed at facilitating cooperation on integrated water resources management.[153] The funding will support improved communication with key stakeholders, including governments; the private sector; civil society; and local communities. Germany committed

€8 million (US$10.5 million) to the MRC for conservation and sustainable use of selected wetland sites, dedicated to support strategies and actions to improve wetland management and "*focus on selected priority sites where integrated and transboundary approaches are needed and where regional cooperation is important*".[154] In 2012, the MRC agreed on a series of messages to contribute to Rio+20, and the UN Conference on Sustainable Development, declaring that "*Decision-makers in the water, food, and energy sectors must engage in dialogue across sectors and across boundaries to seek innovative solutions.*"[155]

Table 3 – The 1995 Mekong Agreement

Legal Framework	**Details**	**Additional information**
Scope	Mekong River Basin (art. 5). The parties agree " To cooperate in all fields of sustainable development, utilization, management and conservation of the water and related resources of the Mekong River Basin including, but not limited to irrigation, hydro-power, navigation, flood control, fisheries, timber floating, recreation and tourism, in a manner to optimize the multiple-use and mutual benefits of all riparians and to minimize the harmful effects that might result from natural occurrences and man-made activities."	It would be more accurate if the term 'lower Mekong Basin' was used, as the upper riparian States to the Mekong – China and Myanmar – are not parties to the agreement. Thus, in the absence of a basin-wide agreement including all Mekong watercourse States, the rules of customary international law apply to the upper reaches.
Substantive rules	The Parties agree to use 'the waters of the Mekong Rivers system in a reasonable and equitable manner'. (Art. 5) subject to additional rules to be agreed under Art. 26.[156]	The rules in Article 5 are modified by the prescriptions in Article 6 which require the maintenance of a minimum flow level on the mainstream and those in Article 7, which provides:"[The Parties agree:] To make every effort to avoid, minimize and mitigate harmful effects that might occur to the environment, especially the water quantity and quality, the aquatic (ecosystem) conditions, and ecological balance of the river system, from the development and use of the Mekong River Basin water resources or discharge of wastes and return flows.
Procedural rules	Specific body of rules on notification, consultation and data exchange, elaborated in subsequent Protocols.	The general rule of equitable and reasonable utilization under the Mekong Agreement is linked directly to a body of specific procedural rules (such as notification and consultation) that apply to intra-basin and inter-basin uses of the system. All uses of the tributaries of the Mekong, including Tonlé Sap, require notification to the Joint Committee.
Institutional mechanisms	The council of Ministers is the highest decision-making body for the Mekong River Commission (MRC), the oversight of the commission is the responsibility of the Joint Committee and the national level implementation is by the a National Mekong Committee in each contracting State. Technical and administrative functions fall under an operational arm, the MRC Secretariat.	The MRC is central to the implementation of the Agreement; comprised of 3 permanent bodies – the Council (one member from each participating riparian State at the Ministerial and Cabinet level, empowered to make policy decisions on behalf of his/her government); the Joint Committee (one member from each participating riparian State at no less than Head of Department level); and, the Secretariat.

Dispute settlement	MRC responsible for dispute settlement (Art. 18) Disputes not resolved by MRC are to be referred to governments (Art. 34; 35)	One of the functions of the Council is "to entertain, address and resolve issues, differences and disputes referred to it by any Council member, the Joint Committee, or any member State on matters arising" under the Agreement. The Joint Committee is also required to "address and make every effort to resolve issues and differences that may arise between regular sessions of the Council, referred to it by any Joint Committee member or member State on matters arising" under the Agreement, and "when necessary to refer the matter to the Council." Disputes not resolved by MRC are referred to the Governments for negotiation, possible mediation or eventual settlement "according to the principles of international law". The Agreement contains no reference tony form of compulsory third party dispute settlement procedure.

4.4 The Danube River

Both the Danube and the Drin, discussed below are subject to a range of legal frameworks, including the UNECE Water Convention and the EU Water Framework Directive. In addition to these instruments, many European watercourses are subject to specific agreements, such is the case on the Danube and as is evolving on the Drin (discussed below).

The Danube River is Europe's second largest and the world's most 'international 'watercourse touching some 19 countries with a long history of cooperation stretching back to the 17th century (GWP Toolbox, Case Study 306) The basin is home to important ecosystems, "*highly valuable in environmental, economic, historical and social terms,*"[157] which were and still are under threat, particularly as a result of pollution from agriculture, industry, and urbanisation and settlements across the basin. Cooperation on the Danube began in the early 1900s over navigational issues and gradually expanded in both geography and scope. This process, which commenced with a 'Trans-national Monitoring Network' (1985 Bucharest Declaration) culminated, after considerable efforts, in the adoption of the Convention on Co-operation for the Protection and Sustainable Use of the River Danube (the Danube River Protection Convention or the "DRPC").[158] The DRPC was signed on 29 June 1994 in Sofia, Bulgaria by eleven of the Danube riparian states – Austria, Bulgaria, Croatia, the Czech Republic, Germany, Hungary, Moldova, Romania, Slovakia, Slovenia, and Ukraine – and the European Community, and entered into force in October 1998, when it was ratified by the ninth signatory (marking 75% of the total).

The process benefited from considerable EU support, under the Environmental Programme for the Danube River Basin (EPDRB) led by a Task Force that started in 1991; it was implemented to support and reinforce national actions for the restoration and protection of the Danube River and also to supplement the ICPDR's future work.

The DRPC's main objective is to ensure that surface waters and groundwater within the Danube River Basin are managed and used sustainably and equitably. This involves:

- The conservation, improvement, and rational use of surface waters and groundwater
- Preventive measures to control hazards originating from accidents involving floods, ice or hazardous substances and
- Measures to reduce the pollution loads entering the Black Sea.

All the signatories agreed to co-operate on fundamental water management issues by taking "all appropriate legal, administrative, and technical measures to at least maintain and, where possible, improve the current water quality and environmental conditions of the Danube River and of the waters in its catchment area, and to prevent and reduce as far as possible adverse impacts and changes occurring or likely to be caused."[159]

To implement the DRPC a multilateral institutional mechanism – the International Commission for the Protection of the Danube River (ICPDR) – was formed by fifteen contracting parties[1] and has proved to be a highly effective joint body. It is credited not only with significant improvements in environmental conditions in the basin but also in coordinating infrastructure management along the Danube River. The ICPDR serves as a forum for coordination and cooperation on essential water management issues. It defines and recommends legal, administrative, and technical measures necessary to maintain and improve the water quality in the Danube River and its tributaries. The ICPDR's activities are supported by a number of Technical Expert Groups,[160] which "*form the backbone of the operation and the success of the ICPDR*". Seven Expert Groups deal with a variety of issues from policy and water pollution reduction measures to implementing the EU WFD.

[1] Austria, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Germany, Hungary, Moldova, Montenegro, Romania, Serbia, Slovakia, Slovenia, Ukraine, and the European Commission

The Joint Programme of Measures, adopted within the ICPDR, is generally consistent with the EU WFD and covers the key environmental issues in the basin such as organic and nutrient pollution, hazardous substances, and hydro-morphological alterations, which each cause serious impact on transboundary surface waters and groundwater.[161]

Cooperation on the Danube has occurred at a number of levels, with data collection and information exchange, the establishment of early warning systems, monitoring of water quality and a uniform methodology on emissions data; all of these actions have served to mitigate the adverse impact on ecosystems across the basin. The Danube case study is a positive example of how nested legal and institutional frameworks can merge into effective cooperation activities under key agreed objectives.

Table 4 – The 1994 Danube River Protection Convention

Legal Framework	**Details**	**Additional information**
Scope	The surface waters and groundwater within the Danube River Basin; The Danube River Protection Convention covers the catchment area of the river as well as the a number of activities from the discharge of waste waters to fisheries	Article 3 defines the scope including the geographical scope defined as the catchment area and the activity scopes. "Catchment area" of the Danube River means the hydrological river basin as far as it is shared by the Contracting Parties
Substantive rules	Article 2 – Objectives and Principles of Cooperation The Contracting Parties shall strive at achieving the goals of a sustainable and equitable water management, including the conservation, improvement and the rational use of surface waters and groundwater in the catchment area as far as possible. Moreover the Contracting Parties shall make all efforts to control the hazards originating from accidents involving substances hazardous to water, floods and ice hazards of the Danube River. Moreover they shall endeavour to contribute to reducing the pollution loads of the Black Sea from sources in the catchment area. The Contracting Parties pursuant to the provisions of this Convention shall cooperate on fundamental water management issues and take all appropriate legal, administrative and technical measures, to at least maintain and improve the current environmental and water quality conditions of the Danube River and of the waters in its catchment area and to prevent and reduce as far as possible adverse impacts and changes occurring or likely to be caused.	Comprehensive list of areas and joint actions for cooperation under Article 2. The Polluter pays principle and the Precautionary principle constitute a basis for all measures aiming at the protection of the Danube River and of the waters within its catchment area Strong focus on limiting transboundary adverse impact. Several important Annexes to Agreement on Best Available Techniques and Best Environmental Practice (annex 1); and lists of industrial and hazardous substances.

Procedural rules	Article 4 defines the forms of cooperation as: (a) consultations and joint activities in the framework of the International Commission pursuant to the provisions of this Convention; (b) exchange of information on bi- and multilateral agreements, legal regulations and on measures in the field of water management; exchange of legal documents and directives and of other publications; other forms for the exchange of information and experiences.	Article 5 to 9 further articulate the forms of cooperation expected of the contracting parties; Article 7 contains precise guidelines on water quality objectives and criteria. Article 8 calls for emission inventories, action programmes and progress reviews;
Institutional mechanisms	The highest authority in the International Commission for the Protection of the Danube River (ICPDR); also Conference of Parties is provided for. There are expert groups on specific thematic areas and issues and to prepare reports and recommendations for coordinated action. The ICPDR has a Permanent Secretariat to support its work, supervised by an Executive Secretary	Article 10 – The Contracting Parties shall report to the International Commission on basic issues required for the Commission to comply with its tasks. Article 18 – ICPDR – responsible for implementing the agreement; has remit for taking decisions on cooperation.
Dispute settlement	Article 24 – If a dispute arises between two or more Contracting Parties about the interpretation or application of this Convention, they shall seek a solution by negotiation or by any other means of dispute settlement acceptable to the parties to the dispute, if appropriate with assistance by the International Commission. Failing this, the dispute shall be submitted for compulsory decision to one of the following means of peaceful settlement: – the International Court of Justice; – arbitration in accordance with Annex V to this Convention.	

Despite the long history of cooperation across the Danube, a dispute on the Gabcikovo–Nagymaros dam project remains unresolved. The Danube River case offers an example of the practical application of the principles of international water law by the ICJ.[162] The dispute concerned the implementation of a bilateral treaty concluded by two neighbouring States, Hungary and Czechoslovakia, which aimed to develop hydro-power by constructing dams on their shared border. The ICJ decision was especially significant in restating the status of a watercourse State's "*basic right to an equitable and reasonable sharing of the resources of an international watercourse*",[163] as embodied in Article 5 of the UNWC.

The ICJ requested that the parties find a solution to their dispute in light of its decision. But 20 years after the ruling the parties have yet to fully comply. The issue of whether or not the ICJ is the best forum for water-related controversies continues to be debated,[164] despite the recent increase in disputes involving neighbouring watercourse States submitted to its jurisdiction.

4.5 The Drin River

The Drin River watershed covers 15,540 km^2 and has its origin in the Lake Ohrid–Lake Prespa ecosystem in Albania, Macedonia, and Greece. The Drin River links the Prespa-Ohrid-Shkoder lakes region of the Balkan Peninsula to form a single ecosystem, which is widely acknowledged as an ecological area of global significance. However, there are water quality and irrigation water abstraction problems which are exacerbated by hydroelectricity generation and gravel mining in the riverbed.

The Drin Basin Dialogue was initiated among the riparian States of Albania, Former Yugoslav Republic of Macedonia, Greece, Kosovo (UN administered territory under UN Security Council resolution 1244), and Montenegro with the aim to remedy the deteriorating environmental situation in the basin. The Dialogue is a coordinated and structured consultation process conducted under the auspices of the UNECE Water Convention, which plays an important role in the on-going process. The main objective of the dialogue is to develop a Shared Vision for sustainably managing the basin's water resources and improving transboundary cooperation. The Dialogue also contributes directly to, and is part of, the Mediterranean Component of the EU Water Initiative[165] and the GEF Med Partnership on the Large Mediterranean Marine Ecosystems.[166]

On 18 April 2011, Ministers of the basin States issued a Declaration expressing their support for continuing and enhancing the Drin Basin Dialogue with assistance from GWP Mediterranean and the UNECE. The Drin States have also signed a Memorandum of Understanding (MoU) – "The Drin: A Strategic Shared Vision,"[167]which is based on a clearly expressed political will "*towards basin-wide mutual understanding in water management as a precondition for cooperation towards sustainable development*". The participating States specifically committed themselves "*to sustainable development in the Drin Basin that can be brought about in a coherent way through transboundary cooperation, in accordance with the principles of the European Union integration process*".

The Drin MoU serves as an interim arrangement to promote and enhance collaboration on the ground, pending the conclusion of a proper international agreement, which is expected to establish basin-wide cooperative management and create a basin commission. Should this prove successful it would add to the track record of cooperation actively facilitated under the UNECE Water Convention framework.

Table 5 – The Drin Memorandum of Understanding

Legal Framework	Details	Additional information
Scope	1. The "Sub-Basins" consist of the respective geographical areas of each of the following basins: the Prespa Lakes, Lake Ohrid, Lake Shkoder/Skadar (collectively, the "Three Lake Areas"); the Black Drin River (Crn Drim or Drin i Zi); the White Drin River (Beli Drin or Drin iBardhë); the Drin River (Drim or Drini or Drin imadh), and the Buna/Bojana River. 2. The "Extended Transboundary Drin Basin," or "Drin Basin" is the geographical area consisting of the integrated geographical areas of all the Sub-Basins.	The "Parties" are the five water and/or environment competent Ministries of the Drin Riparians represented by the respective Ministers and their representatives. The present MoU shall not affect the status of bilateral relationships and rights and obligations of the Parties under prior Memoranda of Understanding and/or all international Agreements concluded among them.
Substantive rules	Article 2. Objective. The Parties, through their Ministers and their representatives, commit to promote joint action for the coordinated integrated management of the shared water resources in the Drin Basin, as a means to safeguard and restore to the extent possible the ecosystems and the services they provide, and to promote sustainable development across the Drin Basin.	Article 3. Common Concerns for sustainable development of the Drin Basin. The Parties hereby should undertake concrete actions to address problems identified as affecting sustainable development in the entire Drin Basin or in one or more of the Sub-Basins :
Procedural rules	Detailed series of concrete engagements and actions related to objective of the MoU. Article 4. Priority Actions at national, bilateral and/or multilateral levels. 1. In the short term (to 2013) a set of minimum, "No Regret" measures should be initiated and carried out to promote integrated water resources management, also at national level, and facilitate enhancement of cooperation, including:… (see extensive list)	
Institutional mechanisms	The "Drin Core Group" (hereinafter, "DCG") is the informal body established in 2009 to provide a Forum for coordination among the Parties to enable communication and cooperation among them and the key stakeholders and for the coordination and the facilitation of implementation of the Drin Dialogue, comprising of representatives of the: Parties; Prespa Park Management Committee; Lake Ohrid Watershed Committee; Lake Skadar-Shkoder Commission; United Nations Economic Commission for Europe (hereinafter referred to as the "UNECE"); Global Water Partnership – Mediterranean (hereinafter referred to as the "GWP-Med"); and Mediterranean Office for Environment Culture and Sustainable Development (hereinafter referred to as the "MIO-ECSDE"). Art. 5 (2) Understanding the need for the implementation of the Strategic Shared Vision to reflect the views of the stakeholders the Parties call for an annual meeting of stakeholders from the Drin Riparians and appreciate and accept the offer of UNECE and GWP-Med to facilitate its organization.	The "Drin Dialogue" is a coordinated and structured consultation process, initiated in2009, among the Parties, the existing joint Commissions/Committees in some of the Sub-Basins and stakeholders, towards the development of a Shared Vision for the enhancement of transboundary cooperation and sustainable management of the Drin Basin in compliance with existing regional and international legislation in particular the provisions of the UNECE Water Convention, the EUWFD and other related multilateral agreements, facilitated by the UNECE and the GWP Med and conducted within the frameworks of the UNECE Water Convention and the Petersburg Phase II / Athens Declaration Process.

Dispute settlement	No dispute settlement, but Ministers responsible to review annually the progress of implementation of the MoU. Article 5. Implementation and Monitoring (5) The Parties ensure the participation of their respective Governments, within their possibilities, to provide resources for the implementation of the provisions of this MoU and call upon and invite the EU, Global Environment Facility and other donors to join and provide support in this regard. The DCG shall initiate, stimulate and coordinate activities in thisregard.	Article 6. Meetings of the Parties. The Ministers responsible for the management of water resources and/or environment of the five Parties shall meet ANNUALLY to review progress in the implementation of the present MoU and its provisions.

This document has laid the formal foundation for concluding a future legal regime on the Drin River basin. Of note is the constructive involvement of GWP Med and regional organisations (UNECE) in the process, an engagement that continues as the Drin Core Group goes forward with its mission. The role of law is also readily apparent in the alignment with the EU WFD, and other legal instruments expressly referred to in the MoU.[168] Even though this is only an interim arrangement, all five key elements of the legal framework are clearly present. There are plans to include stakeholders in the regime-building process, supported by national government engagement.

5. LESSONS LEARNED

"The law can play a positive role in mitigating fear by defining water security, as international water traditionally has, as a fairly apportioned common source of supply."[169]

The State practice surveyed here demonstrates how the rules of international law constitute a coherent framework for the cooperative development and management of transboundary water resources, especially under framework instruments such at the UNWC and the UNECE Water Convention, which continue to have an important influence on treaty and state practice in this field. Global and regional treaties and basin-wide agreements provide substantive and procedural rules, as well as institutional mechanisms and means of dispute settlement that facilitate this. International law plays three key roles – providing a meta-framework for international relations among sovereign States (law of nations); a platform for integration (across scales, sectors and disciplines); and a mechanism for implementing the rules of the game (substantive and procedural rules of implementation contained primarily in international agreements).

In all of the case studies – the Zambezi, Niger, Mekong, Danube, and Drin – the cooperative efforts aimed at jointly managing transboundary watercourses was crystallized in legally binding arrangements, often linked with other supporting instruments and backed up by institutional mechanisms. The development reports on the Mekong and the Zambezi rivers, each of which revealed huge economic potential, are anchored in legal frameworks that provide the foundation and parameters for cooperation. On the Drin, one of the fundamental purposes of the MoU is to bring together stakeholders to ensure continued development consistent with the protection of ecosystems across the extended transboundary basin as a shared objective.[170] The Danube, whilst subject to a long history of cooperation and conflict, is presently governed by a contemporary agreement under the framework of the UNECE Water Convention, which provides for an innovative compliance mechanism, where the institutional body plays a key role. Importantly, the Danube legal regime is implicitly based on the 'community-of-interests' concept, which was advanced by the World Court in the Oder River Case in the 1920s and recently reconfirmed in the Danube decision as applicable to both navigation and non-navigational uses.[171] The

notion of the 'community-of-interests' is generally viewed and embraced as the bedrock of cooperation – a recognition of the mutual inter-dependence of basin States on their shared water resources.

In Africa, multilateral legal instruments have played an important role for the Niger and the Zambezi river basins, but their focus has been on institutional mechanisms. The absence of sufficiently developed substantive and procedural rules in these instruments has hindered effective basin-wide cooperation. In the case of the Niger River, the watercourse States are currently calling for accession to the UNWC. This is a step which will bring in more detailed substantive and procedural rules and extend the existing legal framework beyond its present emphasis on the NBA.

It is important to ensure the widest possible basin cooperation through formal involvement of all watercourse States in the legally binding arrangements. It is difficult to imagine how the development plans envisaged in the Zambezi River basin could be properly implemented without Zambia's participation in the instituting agreement. Whether or not these arrangements will be supported by all basin States, the legal framework provided by the SADC Revised Protocol and the ZAMCOM Agreement will play a crucial role in the management of the Zambezi.

The Mekong legal regime offers insights into how substantive rules and procedural provisions contained in its founding instrument have evolved through the work of its institutional mechanism. While the Xayaburi dam project controversy has yet to be finally resolved, the Mekong regime offers sufficiently developed procedures for this to happen. The on-going development and management of the Mekong basin water resources demonstrates the role that international law plays. As a meta-framework, it governs the parties relations under the Mekong Agreement, and also elaborates the substantive and procedural rules to be followed in their activities under the treaty.

From a regional perspective, we can make several observations:

Africa has adopted a two-pronged approach to advancing transboundary basin cooperation through multilateral agreements as framework instruments combined with a growing support for the UNWC. The basin-specific arrangements have closely aligned with the fundamental principles of these multilateral instruments as well as with the UNWC and rules of customary

international law. The African support for the UNWC is impressive. One third (ten) of the contracting countries that have endorsed the Convention are African.[172] In addition, nine of the Niger basin States expressly support the UNWC and have called for its ratification across the basin. The existence of a functioning legal instrument across the SADC region combined with numerous watercourse arrangements across the continent demonstrate African countries' general willingness to enter into relations based on the rule of law. This is reflected also in the difficult but continuing efforts to complete a legally binding framework on the Nile.

Regional institutional mechanisms, such as the African Ministerial Council on Water and a significant number of river basin organisations across the continent, provide focal points for cooperation.[173] Linking transboundary water resources management to water security and climate change has led to a number of regional projects. GWP works to facilitate cooperation across five transboundary basins in Africa (the Kagera; Lake Chad; Limpopo; North-Western Sahara Aquifer system; and the Volta) under the Water, Climate, and Development Programme.[174] This initiative aims to "*promote water as a key part of sustainable regional and national development and contribute to climate change adaptation for economic growth and human security*" under a strategy, "*Promoting peace building, human security, and regional integration through better management of shared waters and enhanced capacity of regional climate change centres*".[175] Such activities across Africa provide additional impetus to facilitating cooperation on various levels.[176] GWP also develops a range of undertakings in a number of transboundary watercourses across its network, including work on climate change more broadly, and on river deltas.[177]

Across **Europe** and **Central Asia**, the influence of the principal regional legal instruments, the UNECE Water Convention (and the additional legal instruments adopted under the UNECE umbrella, including the UNECE Protocol on Water and Health) and the EU WFD, continues to be significant, if not crucial. They prescribe the key legal parameters and provide institutional support for negotiating and implementing basin-specific agreements. The main objective of many of these arrangements is to limit adverse transboundary impacts by reducing pollution and ensuring adequate protection of aquatic ecosystems. This is being accomplished through an elaborate programme comprising substantive and procedural rules, the establishment of effective institutions and the implementation of dispute prevention mechanisms, such as monitoring compliance at the regional and basin levels across and beyond Europe under the umbrella of the UNECE

Water Convention. The influence under this agreement has been credited with promoting and advancing transboundary cooperation under well-established watercourse regimes, such as the Danube, and under more recent ones, including the Aral Sea, across the Caucasus region, the Sava River basin, and the Drin. The Convention's support for National Policy Dialogues has gone a long way to assisting with facilitating transboundary cooperation across the vast array of international waters shared under the UNECE mandate.

Water treaty practice across Europe continues to mature. A growing number of institutional mechanisms, especially under the UNECE Meeting of the Parties and other European river basin organisations, play a central role in day-to-day watercourse management through information exchange, monitoring, enhancing preparedness for water-related hazards, and facilitating national implementation and compliance with agreed obligations. The imminent opening of the UNECE Transboundary Water Convention for universal accession will extend the geographical application of this instrument and provide a complementary vehicle to the UNWC; while the latter instrument focuses on use-allocation rules and processes, the former convention is targeted at dealing more specifically with limiting transboundary impact. Discussions are already underway on how this legal dichotomy will affect inter-State transboundary water relations and progress has been made in ensuring the compatibility of these two instruments.[178]

In **Asia**, the Mekong River legal regime demonstrates how cooperation built around an effective and relatively well-endowed institutional mechanism can successfully advance despite considerable economic, social, and environmental diversity across the region. The legal framework established by the Mekong Agreement further evolves as a dynamic instrument through adopting additional implementing instruments such as the Procedure on Notification, which was invoked in considering the proposed Xayaburi hydropower project. The Mekong Agreement has similar procedures to be followed where there is a need to develop new or increased uses or where a dispute arises.

As an operational tool for implementing agreed legal prescriptions stemming from treaty or customary norms, international law provides pragmatic means for facilitating cooperation on transboundary waters. Nonetheless, serious challenges remain – most of which are linked directly to the economic, social, and environmental imperatives advanced by sovereign nation States.

The integrated management of water resources shared by two or more independent States in the absence of any supra-national governance structure certainly presents a particularly difficult task, especially where competing uses or demands are hard to accommodate or reconcile. In this context the role of transboundary water treaties and the role regional bodies, such as the UN and regional economic integration organs, becomes increasingly important as mechanisms to redress power imbalances.

From an international legal perspective, the global imperative of '*water for all through peaceful means*' is captured in treaties and endorsed in principles of customary law. But not all sovereign States strictly adhere to these rules all of the time. There is a substantial degree of misperception or scepticism on the part of some States towards the UNWC, generally as a result of misinformation or hydro-geopolitical bias. While the entry into force of the UNWC will not necessarily win over all critics, it will have a positive impact on inter-State relations, especially in those regions that lack adequate transboundary water treaty arrangements. It will take time before the advantages of having a set of well-balanced common rules and procedures yield results and are perhaps viewed more positively by detractors. This has already been the case with the international ratification campaign which has served to bring on board supporters who were not convinced in the past. This paves the way for increased endorsement in the future. In the Tigris-Euphrates basin, Turkey (which voted against the UNWC), which is downstream on some transboundary watercourses, might explore more fully the potential benefits from a more cooperative approach, including under the framework of the UNWC or UNECE Helsinki Agreement. Across China the increased treaty practice is taking on board the fundamental principles set forth under the UNWC and the UNECE Water Convention, with recent agreements concluded with Russia and Kazakhstan reflecting this.[179]

The case studies help to determine the most challenging transboundary water management issues and to discern some of the essential functions performed by international law:

Mitigating unilateral action and unfettered State sovereignty through the rule of law

Some of the main problems in managing transboundary water resources arise from the "lack of political willingness; differences in socio-economic and cultural levels between riparian countries; and lack of trust and mutual interests, conflicting objectives, and different priorities between countries

in relation to their history, sovereignty, and possible territorial claims."[180] Asymmetries in power as well as economic and geographical disparities in international relations are addressed through the fundamental principles of international law – such as sovereign equality (which levels the playing field in law), equity, fairness, the duty to cooperate and the requirement that disputes be resolved peacefully. Rules of international law prevent or inhibit unilateral unlawful action through a number of mechanisms. In most cases States abide by the obligations they impose on themselves by virtue of entering into legally binding agreements (*pacta sunt servanda*[2]). However, where States fail to comply with their duties and obligations, the rules of State responsibility prescribe the process for redress, as a deterrent against illegal acts. When rules are violated, legal consequences follow. In extreme cases, such as actions which threaten peace, breaches of the peace or acts of aggression, the UN Security Council is empowered to take action to maintain or restore international peace and security (Chapter VII, UN Charter). There are some who have mounted a campaign to have breaches of environmental security, and water security covered under Chapter VII; so far without success.[181]

Providing a fulcrum for balancing competing interests

Opposing or different development imperatives of national governments related to uses of shared water resources may threaten economic and environmental interests. The tension between economic development and environmental protection plays out endlessly in various transboundary water management scenarios. Legal norms help to ascertain, protect, and balance divergent interests supported by procedures aimed at ensuring equity, fairness, and transparency.[182] The governing rule of 'equitable and reasonable use', contained in most treaty practice in this field, including under the UNWC and UNECE Water Convention, provides the foundation for this balancing process.

A framework for integration

A properly functioning treaty regime, is required for development and investment opportunities involving transboundary water resources otherwise they will have limited impact and be exposed to political risks. Identifying and requiring informed consideration of 'all relevant factors'

[2] Common Latin term for "agreements must be kept"; Article 26 of the Vienna Convention on the Law of Treaties. (May 1969), provides, "Every treaty in force is binding upon the parties to it and must be performed by them in good faith", available at http://untreaty.un.org/ilc/texts/instruments/english/conventions/1_1_1969.pdf; .

and circumstances across the basin, in an inclusive manner, in determining equitable and reasonable use calls for integration across scales and sectors. This process is facilitated through formal arrangements, especially where institutional mechanisms and rules of procedure are part of the agreement.[183] The treaty and State practice under the umbrella of the UNECE Water Convention demonstrates how this is achieved in operational terms and continues to provide a model for transboundary water resources management.

There is a need to improve the coherence and consistency of the rules of law that apply to transboundary water resources development and management at the international, regional, and national levels. The 'traditional' international water law framework, which focuses primarily on use-allocation, covers the five core elements relevant to water use in its broadest sense. However, new issues emerge, which challenge the established legal order such as human rights and rights to water, the water/energy/food nexus, trade in water, land-grabs, and so forth. These may require new approaches reflected in relevant multilateral arrangements, in ways that facilitate effective inter-State cooperation. In this regard a more coherent read-across relevant multi-lateral treaties as they relate to transboundary water resources management important – such as the 1971 Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention), 1992 Convention on Biological Diversity, the 1994 Convention to Combat Desertification, the United Nations Framework Convention on Climate Change, the UN Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD), as just some examples,[184]

6. LOOKING TO THE FUTURE

"What is common to the greatest number has the least care bestowed upon it. Everyone thinks chiefly of his own, hardly at all of the common interest" Aristotle[185]

What does the future hold for the water-related agenda? How should the international community address the global imperative for cooperation? A number of high-level policy fora have incorporated transboundary water resources as part of their agenda. They include, *inter alia*, a recently convened UN Roundtable on Water Security,[186] the World Economic Forum,[187] the 6thWorld Water Forum,[188] the numerous preparatory meetings for Rio+20 and its final outcome,[189] and the recent events surrounding the UNECE Water Convention Meeting of the Parties (Rome, 28-30 November 2012).[190]

The 2012 Bonn Conference explored the water, energy, and food nexus, and with a series of recommendations[191] urging governments to "*adopt a basin-wide perspective reflecting the principles of integrated water resources management*". For international basins, it recommended that States ratify the UNWC and look to incorporating benefit sharing in water sharing (this is the approach promoted and facilitated under the UNWC).[192] This is consistent with regional State practice. The Mekong Rio Message says that "*transboundary cooperation can enhance a broader set of benefits and opportunities than individual country approaches*".[193] Despite significant contributions from across the international water community, the Rio+20 final outcome document failed to mention this directly, but recognised "*that water is at the core of sustainable development as it is closely linked to a number of key global challenges*".[194]

The OECD, in a series of reports, highlights the critical importance of water reform, and proposes "a three-pronged approach to making water reform happen based on the fundamental building blocks of financing, governance, and increased coherence between water and sectoral policies." It emphasises the need for improved governance and policy coherence: "Effective governance is a key ingredient of water reform. Well-functioning institutions and a stable regulatory environment are critical to making the best use of available resources and to make sure all water users align with a set of social,

economic, and environmental objectives. Poorly designed and supported institutions heighten investment risk and reduce the prospects for sustainable financing. …This requires strong institutions, tools, and processes to manage and co-ordinate policy, budgeting, and regulatory development."[195]

This statement is echoed by the Director General of the World Trade Organisation, Mr Lamy who referred to the "triangle of governance "as an emerging model in a multilateral world.[196] He emphasised that "*global governance must be anchored in laws and regulations accompanied by mechanisms for their enforcement, including binding dispute settlements*."[197] In the context of transboundary water resources this calls for increased integration across various water sectors, secured through legal rules and processes, with improved coherence across economic, social, and environmental instruments. The state practice emerging under the UNECE Water Convention offers a sterling example of how this might be accomplished at international, regional and basin-wide levels.

More research is needed to explore how international law might facilitate transboundary water cooperation. Specifically, we need to examine how the current patchwork of legal regimes might be made more coherent and fit for purpose to address contemporary issues such as water demand management, water markets, environmental concerns, climate change, advancing the human right to water, and addressing the legal issues relating to burgeoning 'land-grabs' as wealthy nations seek to ensure their future food security. Some international lawyers argue that fresh water, its availability and use, should now be recognised as '*a common concern of humankind*', similar to climate change and conservation of biodiversity.[198]

Others are exploring the international law concept of obligations *erga omnes*, arguing that the duty to cooperate in the peaceful management of shared water resources is a duty and right opposable on all States.[199] The legal challenge is to crystallise this global imperative within a normative framework consistent with the rules of international law.

Recognising these challenges, possible ways forward include:

- Targeted support for enhancing national capacity in transboundary water resources development and management, including water law as part of the mix with a focus on achieving IWRM and water security;[200]
- Continued support for the UN's transboundary water-related activities, including its current work on water security aligned with the

fundamental tenets of the UN Charter and support for the entry into force of the UNWC as well as support for universal accession to the UNECE Water Convention;

- Renewed global community focus on the duty to cooperate in developing and managing the world's shared water resources. It is necessary to clearly articulate what this means in terms of legal rights and duties as a substantive platform for the UN 2013 International Year of Water Cooperation.

ANNEX I
TRANSBOUNDARY WATER COURSES ACROSS GWP NETWORK

In Africa

Basin name	Area of Basin (km^2)	Number of countries	Countries sharing the Basin
Congo	3 691 000	12	DR Congo (Kinshasa), Angola Republic of Congo (Brazzaville) Zambia, Tanzania, Cameroon Burundi, Rwanda, Sudan, Gabon, Malawi, Uganda
Limpopo	414,800	4	South Africa, Mozambique, Botswana, Zimbabwe
Niger	2,113,200	11	Nigeria, Mali, Niger, Algeria, Guinea, Cameroon, Burkina Faso Benin, Ivory Coast, Chad, Sierra Leone
Nile	3,031,700	12	Kenya, Rwanda, Burundi, Tanzania, Uganda, Ethiopia, South Sudan, Sudan, DR Congo, Eritrea, Central African Republic, Egypt
Okavango	706,900	4	Botswana, Namibia, Angola, Zimbabwe
Orange	945,500	4	South Africa, Namibia, Lesotho, Botswana
Senegal	436,000	4	Mauritania, Mali, Senegal, Guinea
Volta	412,800	6	Burkina Faso, Ghana, Togo, Mali, Benin, Ivory Coast
Zambezi	1,385,300	9	Zambia, Angola, Zimbabwe, Mozambique, Malawi, Tanzania Botswana, Namibia, DR Congo
Incomati	46,700	3	South Africa, Mozambique, Swaziland

In Asia

Basin name	Area of Basin (km^2)	Number of countries	Countries sharing the Basin
Aral Sea	1,231,400	8	Kazakhstan, Uzbekistan, Tajikistan Kyrgyzstan, Afghanistan, Turkmenistan, China, Pakistan
Ganges-Brahmaputra	1,634,900	5	China, Nepal, Bangladesh, India Myanmar
Indus	1,138,800	5	Pakistan, India, China, Afghanistan, Nepal
Kura-Araks	193,200	6	Azerbaijan, Iran, Armenia, Georgia, Turkey
Mekong	787,800	6	Laos, Thailand, China, Cambodia, Vietnam, Myanmar

In Europe

Basin name	Area of Basin (km^2)	Number of countries	Countries sharing the Basin
Rhine	172,900	9	Germany, Switzerland, France, Belgium, Netherlands, Luxembourg, Austria, Liechtenstein, Italy
Neman	90,300	5	Belarus, Lithuania, Russia, Poland, Latvia
Nestos	10,200	2	Bulgaria, Greece
Danube	790,111	15	Hungary, Ukraine, Slovakia, Moldova, Germany, Austria, Serbia (see changes), Bulgaria, Croatia, Czech Republic, Bosnia and Herzegovina, Slovenia, Romania, Austria, Montenegro, European Union

Sava	97,713	6	Serbia, Bosnia and Herzegovina, Croatia, Slovenia, Montenegro, Albania
Drava	41,238	6	Serbia, Croatia, Hungary, Slovenia, Austria, Italy
Dnieper	516,300	3	Belarus, Ukraine, Russia
Dniester	68,627	3	Ukraine, Moldova, Poland
Elbe	132,200	4	Germany, Czech Republic, Austria, Poland
Oder	97,713	3	Czech Republic, Germany, Poland
Vistula	194,424	2	Poland, Slovakia
Daugava	87,900	3	Russia, Belarus, Latvia
Tisza	156,087	5	Ukraine, Romania, Hungary, Serbia, Slovakia

In South America

Basin name	**Area of Basin (km^2)**	**Number of countries**	**Countries sharing the Basin**
Amazon	5,883,400	9	Brazil, Peru, Bolivia, Colombia, Ecuador, Venezuela, Guyana, Suriname, French Guiana
La Plata	2,954,500	5	Brazil, Argentina, Paraguay, Bolivia, Uruguay
Orinoco	927,400	3	Venezuela, Colombia, Brazil

In Central America

Basin name	**Area of Basin (km^2)**	**Number of countries**	**Countries sharing the Basin**
Grijalva	126,800	3	Mexico, Guatemala, Belize
Lempa	18,000	3	El Salvador, Honduras, Guatemala
San Juan	42,200	2	Nicaragua, Costa Rica
Choluteca	7,400	2	Honduras, Nicaragua
Chiriqui	1,700	2	Panama, Costa Rica

ANNEX II
RELEVANT FACTORS MATRIX FROM LEGAL ASSESSMENT MODEL

Source: Wouters, P. et al. (2005). *Sharing Transboundary Waters – An Integrated Assessmentof Equitable Entitlement: The Legal Assessment Model*. IHP-VI, Technical Documents in Hydrology No. 74. Paris: UNESCO.

Relevant factors matrix

The purpose of the Relevant Factors Matrix (RFM) is to provide a framework for collecting and processing the data, which defines and forms the basis of the legal assessment model exercise. The RFM details the range of factors relevant to assessing a transboundary State's entitlement to the uses of the waters of a transboundary watercourse (TIWC), and specifies the information required with respect to each factor. These factors can then be weighed against each other, according to the importance accorded to each by a TIWC State. In determining what is a reasonable and equitable use, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.

The RFM has been designed and developed on the basis of the two principal documents of international law relating to TIWCs – the ILA Helsinki Rules and the UNWC. However, it differs from both sources in a number of ways. The factors are set out below. They are grouped into six broad categories, each of which contains one or more components.

Briefly, the categories are the following:

- Category 1 ("What?") sets out the physical context, covering the physical or natural characteristics of the TIWC;
- Category 2 ("Who?") details the population in the area dependent on the TIWC;
- Category 3 ("What Uses?") identifies the demands on or the uses of the TIWC and the economic and other benefits related to such uses;
- Category 4 ("What Impacts?") identifies the consequences of the uses, both within a nation and the effects of use in one State on others;
- Category 5 ("What Options?") requires consideration of the comparative efficiency of uses and of alternative uses, both in terms of alternative sources of water and broader alternatives that may yield similar benefits; and
- Category 6 is reserved for additional factors that might be considered to be relevant in a particular situation.

The RFM is structured within the following framework:

- Column 1 contains the categories listed above and the constituent components of each;
- Column 2 provides some comments and sets forth very briefly the type of data needed for each category;
- Column 3 is included to record the sources of the data, the methodologies utilised in gathering the data and the assumptions used in the process. It is also intended to incorporate discussion of the difficulties or problems encountered and the solutions employed to overcome them. These are essential steps in ensuring that the process is a transparent one in which the determination of each factor is shown to be supported by justified methods.

RELEVANT FACTORS MATRIX			
Categories and consistuent components		**Comments & data required to assess each component**	**Data sources, methodology, assumptions, problems & solutions***
1. "What?" The physical (natural) characteristics of the TWC	Geographic	Geographical context	
	Hydrographic	Extent of drainage basin or aquifier in the TWC State	
	Hydrological	• Mean water availability: - surface water - ground water • Variability of the resources • Water quality • Contribution of water to the TWC by each TWC State • Hydrological aspects of climate change	
	Climatic	Climate change and potential impacts	
	Ecological / Environmental	Environmental services and goods	
2. "Who?" The population dependent on the TWC	Present population	• Populations in the study TWC State and in the other TWC States (generally and within the TWC basin) • Distribution of population • Livestock	
	Projected population	• Distribution of population	
3. "What Uses?" Uses served by the TWC	Existing uses	• Uses by sector: consumptive and non-consumptive uses • Assessment of uses	
	Potential uses	• "Natural" or planned? • Identify type of use, and rationale • Have feasibility studies been carried out? • Identify and locate use on TWC • Consumptive or non-consumptive • How much water will be used? • Seasonal variations	

RELEVANT FACTORS MATRIX (CONTINUED)			
Categories and consistuent components		**Comments & data required to assess each component**	**Data sources, methodology, assumptions, problems & solutions**
	Exient of "Vital human needs"	• Determine quantity/quality required for sanitation, drinking, bathing and cooking • Determine quantity/quality required for subsistence food production	
	Existing structure of use	Show quantity quality of use of individual user group (e.g. industry, agriculture) in statistical format	
	Dependence of the economy on these activities	• Population dependent on these economic activities • Share of GDP, tax revenues, employment, foreign exchange earnings	
	Social use	• Human develpment index • Customary uses • Gender uses	
	Ecological/environmental use	• Water needed to maintain ecosystem functioning or support recovery of degraded ecosystem • Population dependent on the ecosystem	
4. "What impacts?" Effects of a water use on other TWC States	Impacts of existing and potential uses	• Types of impacts (benefical and adverse impacts, transboundary and national effects • Assessment of physical impacts (changes in physical characteristics – quantity, quality) • Determination of social and economic impacts	
5. "What Options?" Efficiency of and alternatives to the use of the TWC	Specific (comparative efficiency of use)	• Consumptive use (present and projected) • Non-consumptive use	
	Broad (alternatives to use)	• Alternative sources of water for existing or planned uses • Alternatives to using water (which provide similar benefits)	
6. Other relevant factors			

SELECTED BIBLIOGRAPHY

International documents

Declaratory instruments

Helsinki Rules on the Uses of the Waters of International Rivers. Adopted by the 52nd Conference of the International Law Association, Helsinki, Finland, August 1966. Also available at: http://webworld.unesco.org/water/wwap/pccp/cd/pdf/educational_tools/course_modules/reference_documents/internationalregionconventions/helsinkirules.pdf

The Dublin Statement on Water and Sustainable Development. Adopted by the International Conference on Water and the Environment, Dublin, Ireland, January 1992. Also available at: http://www.wmo.int/pages/prog/hwrp/documents/english/icwedece.html

Agenda 21: the Rio Declaration on Environment and Development. Adopted by the UN Conference on Environment and Development, Rio de Janeiro, Brazil, June 1992. Also available at: http://www.unep.org/Documents.Multilingual/Default.asp?documentid=78&articleid=1163Multilateral agreements

Convention on the Law of the Non-Navigational Uses of International Watercourses. Adopted by the General Assembly of the United Nations, New York, USA, 21 May 1997. Official Records of the General Assembly 51/49. Also available at: http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf

Convention on the Protection and Use of Transboundary Watercourses and International Lakes. Adopted by the United Nations Economic Commission for Europe, Helsinki, Finland, 17 March 1992. Also available at: http://www.unece.org/env/water/pdf/watercon.pdf

Draft Articles on the Law of Transboundary Aquifers. Adopted by the International Law Commission and submitted to the United Nations General Assembly, 2008. Official Records of the General Assembly A/63/10. Also available at: http://untreaty.un.org/ilc/texts/instruments/english/draft%20articles/8_5_2008.pdf

International case law

International Court of Justice (1997) *Case Concerning the Gabcikovo–Nagymaros Project (Hungary and Slovakia)*. International Court of Justice Reports 1997: 7. Also available at: http://www.icj-cij.org/docket/files/92/7375.pdf

International Court of Justice (2010) *Case Concerning Pulp Mills on the River Uruguay (Argentina vs. Uruguay)*. International Court of Justice General List No. 135. Also available at: http://www.icj-cij.org/docket/files/135/15877.pdf

Publications

Books and book chapters

Benevisti, E. (2002) *Sharing Transboundary Resources: International Law and Optimal Resource Use.* Cambridge University Press, Cambridge, UK.

Caponera, D.A. (2007) *Principles of Water Law and Administration: National and International, Second Edition.* Taylor and Francis, London, UK.

Earle, A., Jägerskog, A. and Öjendal, J. (Eds) (2010) *Transboundary Water Management: Principles and Practice.* Earthscan, London, UK.

Food and Agriculture Organization (2011) *The State of the World's Land and Water Resources for Food and Agriculture: Managing Systems at Risk.* Food and Agriculture Organization of the United Nations, Rome, Italy and Earthscan, London, UK.

Leb, C. and Wouters, P. (forthcoming) The water security paradox and international law: securitisation as an obstacle to achieving water security and the role of law in de-securitising the world's most precious resource. In: *Water Security: Principles, Perspectives and Practices* (Lankford, B.A., Bakker, K., Zeitoun, M. and Conway, D., Eds). Earthscan, London, UK.

McCaffrey, S. (2007) *The Law of International Watercourses, Second Edition.* Oxford University Press, Oxford, UK.

McIntyre, O. (2007) *Environmental Protection of International Watercourses under International Law.* Ashgate, Hampshire, UK.

Priscoli, J.D. and Wolf, A.T. (2009) *Managing and Transforming Water Conflicts.* Cambridge University Press, Cambridge, UK.

Rieu-Clarke, A., Moynihan, R., and Magsig, B-O., *UN Watercourses Convention User's Guide*. Dundee: CWLPS 2012.

Tanzi, A. and Arcari, M. (2001) *The United Nations Convention on the Law of International Watercourse*. Kluwer Law International, Alphen aan den Rijn, the Netherlands.

Wouters P. (2011) The international law of watercourses: new dimensions. pp.349–541. In: *Collected Courses of the Xiamen Academy of International Law, Volume 3*. (Xiamen Academy of International Law, Ed.) Martinus Nijhoff, Leiden, the Netherlands.

Journal articles

Chen, H., Rieu-Clarke, A. and Wouters, P. (forthcoming) Exploring the legal regimes that govern China's international watercourses – a survey of current practice analysed through the prism of the 1997 UN Watercourses Convention. *Journal of Water Law*

Magsig, B-O. (2009) Introducing an analytical framework for water security: a platform for the refinement of international law. *Journal of Water Law,* **20**(4): 61–69.

McCaffrey, S.C. (2008) The 1997 UN Watercourses Convention: retrospect and prospect. *Global Business and Development Law Journal,* **21**: 165–174.

Mechlem, K. (2009) Moving ahead in protecting freshwater resources: the International Law Commission's Draft Articles on Transboundary Aquifers. *Leiden Journal of International Law,* **22**(4): 801–821.

Rieu-Clarke, A. and Loures, F.R (2009) Still not in force: should states support the 1997 UN Watercourses Convention? *Review of European Community and International Environmental Law,* **18**(2): 185–197.

Rieu-Clarke, A. (2010) The role of treaties in building international watercourses regimes: a legal perspective on existing knowledge. *Water Policy,* **12**(6): 822–831.

Sadoff, C.W. and Grey, D. (2005) Cooperation on international rivers: a continuum for securing and sharing benefits. *Water International,* **30**(4): 420–427.

Tanzi, A. (2010) Reducing the gap between international water law and human rights law: the UNECE Protocol on Water and Health. *International Community Law Review,* **12**(3): 267–285.

Tarlock, A.D. (2008) Water security, fear mitigation and international water law, *Hamline Law Review,* **31**(3): 703–728.

Wouters, P. and Hendry, S. (2009) Promoting water (law) for all. *The Journal of Water Law,* **20**(2/3): 45–51.

Wouters P. and Rieu-Clarke, A. (2004) 'Good water governance': a call for renewed focus and action. *Journal of Water Law,* **15**(3/4): 89–92

Reports and other publications

Boisson de Chazournes, L. (2009) *Freshwater and International Law: the Interplay between Universal, Regional and Basin Perspectives*. The United Nations World Water Assessment Programme Side Publications Series: Insights. United Nations Educational Scientific and Cultural Organization, Paris, France. Also available at: http://unesdoc.unesco.org/images/0018/001850/185080e.pdf.

Dore J., Robinson, J. and M. Smith (Eds.) (2010) *Negotiate – Reaching Agreements over Water*. International Union for the Conservation of Nature, Gland, Switzerland. Also available at: http://data.iucn.org/dbtw-wpd/edocs/2010-006.pdf

Giordano, M.A. and Wolf, A.T. (2002) The world's freshwater agreements: historical developments and future opportunities, pp. 1–8. In: *Atlas of International Freshwater Agreements* (United Nations Environment Programme), UNEP, Nairobi, Kenya.

Global Water Partnership and International Network of Basin Organizations (2009) *A Handbook for Integrated Water Resources Management in Basins*. GWP, Stockholm, Sweden and INBO, Paris, France. Also available at: http://www.gwptoolbox.org/images/stories/Docs/gwp_inbo%20handbook%20for%20iwrm%20in%20basins_eng.pdf

Hooper, B.P. and Lloyd, G.J. (2011) *Report on Integrated Water Resource Management in Transboundary Basins*. United Nations Environment Programme-DHI Centre for Water and Environment, Copenhagen, Denmark.

Also available at: http://www.unepdhi.org/~/media/3CD8AAFFCBD34F28A7FADFC58819B950.ashx

Iza, A. and Stein, R. (Eds) (2009) *RULE – Reforming Water Governance*. International Union for the Conservation of Nature, Gland, Switzerland. *Also available at:* http://data.iucn.org/dbtw-wpd/edocs/2009-002.pdf

Jägerskog, A. and Zeitoun, M. (2009) *Getting Transboundary Water Right: Theory and Practice for Effective Cooperation*. SIWI Report No. 25. Stockholm International Water Institute, Stockholm, Sweden. Also available at: www.siwi.org/documents/Resources/Reports/Report25_Transboundary_Waters_with_WWW.pdf

Loures, F.R., Rieu-Clarke, A. and Vercambre, M-L. (2008) *Everything You Need to Know about the UN Watercourses Convention*. World Wildlife Fund International, Gland, Switzerland. Also available at: http://www.wwf.org.uk/wwf_articles.cfm?unewsid=2272

Rojas, G.A. and Iza, A. (2011) *Governance of Shared Waters. Legal and Institutional Issues*. International Union for the Conservation of Nature, Gland, Switzerland. Also available at: http://data.iucn.org/dbtw-wpd/edocs/EPLP-058-rev-En.pdf

Sadoff, C., Greiber, T., Smith, M. and Bergkamp, G. (2008) *Share – Managing Water across Boundaries*. International Union for the Conservation of Nature, Gland, Switzerland. Also available at:http://www.iucn.org/dbtw-wpd/edocs/2008-016.pdf

Tanzi, A. (2000) *The Relationship Between the 1992 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes and the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses*. Report of the United Nations Economic Commission for Europe Task Force on Legal and Administrative Aspects. UNECE, Geneva, Switzerland.

United Nations Economic Commission for Europe (2011) *Second Assessment of Transboundary Rivers, Lakes and Groundwaters*. Convention on the Protection and Use of Transboundary Watercourses and International Lakes. UNECE, Geneva, Switzerland. Also available at http://www.unece.org/?id=26343

United Nations Water (2008) *Transboundary Waters: Sharing Benefits, Sharing Responsibilities*. Water Task Force on Transboundary Waters, UNW, Zaragoza, Spain. Also available at: http://www.unwater.org/downloads/UNW_TRANSBOUNDARY.pdf

Vinogradov, S., Wouters, P. and Jones, P. (2003) *Transforming Potential Conflict into Cooperation Potential: the Role of International Water Law.* United Nations Educational, Scientific and Cultural Organization, Paris. France. Also available at: http://unesdoc.unesco.org/images/0013/001332/133258e.pdf

White and Case LLP (2011) *International Waters: Review of Legal and Institutional Frameworks*. United Nations Development Programme and Global Environment Facility International Waters Project. UNDP, New York, USA and GEF, Washington, USA. Also available at: http://biodiversity-l.iisd.org/news/undpgef-publish-review-of-legal-and-institutional-frameworks-for-transboundary-waters/

World Bank (2010) *Sustaining Water for All in a Changing Climate*. World Bank Group Implementation Progress Report. World Bank, Washington, USA. Also available at http://water.worldbank.org/water/publications/sustaining-water-all-changing-climate-world-bank-group-implementation-progress-report

Wouters, P., Vinogradov, S., Allan, A., Jones, P. and Rieu-Clarke, A. (2005) *Sharing Transboundary Waters – an Integrated Assessment of Equitable Entitlement: the Legal Assessment Model*. International Hydrological Programme Technical Document in Hydrology No. 74. United Nations Educational, Scientific and Cultural Organization, Paris. France. Also available at:http://unesdoc.unesco.org/images/0013/001397/139794e.pdf

Wouters, P. (forthcoming) Addressing water security challenges – the international law 'duty to cooperate' as a limit on absolute state sovereignty. In: *Sovereignty and the Development of International Water Law* (Tvedt, T., McIntyre, O. and Woldetsadik, T.K., Eds).

END NOTES

[1] See UN Resolution 66/288, *The future we want* (11 September 2012). http://www.un.org/ga/search/view_doc.asp?symbol=%20A/RES/66/288&referer=http://www.un.org/en/ga/66/resolutions.shtml&Lang=E

[2] Transboundary or shared in the context of this paper are used interchangeably and mean international. These terms refer principally to river basins, catchments, watercourses, lakes and aquifers shared by two or more countries (in other contexts transboundary can refer to watercourses shared at a national level by different sub-national entities; it is not the case here).

[3] IUCN in a recent publication examining legal and institutional issues in this field provided this introduction, "*The concept of 'shared waters' was chosen for the title of this book instead of the concept of "shared basins" in order to promote a holistic vision of water, independent of its geographical location within a territory, as well as to provide an understanding of the legal and institutional aspects of managing and conserving bodies of water located between two or more States. It is precisely the water resource itself that is shared, while by nature, the basin cannot be divided and as such, it is not specifically "shareable"*. Grethel Aguilar Rojas and Alejandro Iza (2011). *Governance of Shared Waters. Legal and Institutional Issues*. Gland, Switzerland. http://data.iucn.org/dbtw-wpd/edocs/EPLP-058-rev-En.pdf

[4] IWRM's social equity goal is "*to ensure equitable access to water and to the benefits from water use between women and men, rich people and poor, and across different social and economic groups both within and across countries, which involves issues of entitlement, access and control.*". R. Lenton and M. Muller (eds.) (2009). *Integrated Water Resources Management in Practice: Better Water Management for Development*. GWP/Earthscan, quoted in the GWP Policy Brief on Social Equity; The Need for an Integrated Approach. http://www.gwp.org/Global/About%20GWP/Publications/Policy%20Briefs/GWP%20EquityPolicy%20Brief_Final.pdf

[5] http://www.gwp.org/Global/About%20GWP/Strategic%20documents/GWP_Strategy_2009-2013_final.pdf

[6] GWP, Strengthening Institutions for Transboundary Waters in Africa. http://www.gwp.org/Our-approach/Special-Programmes/Strengthening-institutions-for-transboundary-waters-in-Africa1/

[7] The SADC countries comprise Angola, Botswana, Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. For more details, *see* Salman M.A. Salman, *Legal Regime for Use and Protection of International Watercourses in the Southern African Region: Evolution and Context*, 41 NAT. RESOURCES J. p. 981 (2001).

[8] Agreement On the Nile River Basin Cooperative Framework. http://www.internationalwaterlaw.org/documents/regionaldocs/Nile_River_Basin_Cooperative_Framework_2010.pdf The CFA was signed in May 2010, in Uganda, by six of the Nile Basin countries. Egypt, Sudan and the Democratic Republic of Congo (DRC) refused to sign. The agreement has now entered into force. Egypt and Sudan have recently agreed common strategies on the Nile, which could compromise basin-wide cooperation. See "The Nile River: Egypt and Sudan firm up water alliance", Africa Review, 5 October 2012. http://www.africareview.com/Special+Reports/Khartoum+and+Cairo+Nile+River+ties/-/979182/1510906/-/yttq5qz/-/index.html

[9] The 20th regular Nile Council of Ministers (Nile-COM) meeting held recently in Kigali, Rwanda approved scaling up of country contributions to support the operations of the Nile Basin Initiative (NBI), starting with Financial Year 2013/2014. The Ministers noted that this will not only enable NBI to properly operate but will also leverage funding from Development Partners. The meeting, whose theme was 'Institutional sustainability for delivery of basin-wide benefits,'

was held on 5 July 2012. Nile-COM members commended progress made by NBI in the last Financial Year 2011/2012, especially with regard to preparation of investment projects worth USD 1.1 billion to date, out of which USD 932 million has been so far secured. The investment projects are in three areas of priority to NBI Member States, namely Power, Agriculture and River Basin Management. The 20th Nile-COM meeting further approved NBI's overall Strategic Plan for the next five years (2012 – 2016), with an estimated budget of USD 292 million required to implement the projects out of which about 75% will go to preparation of investment projects. http://www.nilebasin.org/newsite/index.php?option=com_content&view=article&id=133&Itemid=139&lang=en

[10] Wouters, P., "*The International Law of Watercourses: New Dimensions,* Xiamen Academy of International Law, Vol. 3 Collected Courses of the Xiamen Academy of International Law 2010, 347-541.

[11] The Rogun hydropower station in Tajikistan may cost Uzbekistan over $600 million annually in losses from agriculture. "Uzbekistan to lost $600m a year due to Rogun Dam", The Nation, 24 September 2012. http://www.nation.com.pk/pakistan-news-newspaper-daily-english-online/business/24-Sep-2012/uzbekistan-to-lose-600m-a-year-due-to-rogun-dam

[12] "Putin Signs Kyrgyzstan Dam Agreements, Extends Military Presence, Writes Off Half a Billion USD Debt", 21 September 2012, OOSKAnews. "Russian President Vladimir Putin has offered support to Kyrgyzstan in its conflict with downstream Uzbekistan over distribution of water resources in Central Asia. Almost $500 million USD in debt will be excused in exchange for a package of deals that will extend Moscow's water, energy and military influence in the region. … Earlier this month, Uzbek President Karimov reproached Kyrgyzstan and Tajikistan for their plans to dam trans-boundary waterways for hydropower projects, and predicted future water wars in the region." http://www.ooskanews.com/daily-water-briefing/putin-signs-kyrgyzstan-dam-agreements-extends-military-presence-writes-half-bil

[13] http://www.mrcmekong.org/assets/Publications/agreements/agreement-Apr95.pdf

[14] Treaty Between The Government Of The People's Republic Of Bangladesh And The Government Of The Republic Of India On Sharing Of The Ganga/Ganges Waters at Farakka (1996) recognizes in its Preamble, "that the need for making an arrangement for sharing of the Ganga/Ganges waters at Farakka in a spirit of mutual accommodation and the need for a solution to the long-term problem of augmenting the flows of the Ganga/Ganges are in the mutual interests of the peoples of the two countries" … and the parties desires to find "a fair and just solution without affecting the rights and entitlements of either country other than those covered by this Treaty, or establishing any general principles of law or precedent". http://www.worldwater.org/ganges.htm

[15] The Indus Waters Treaty 1960. http://siteresources.worldbank.org/INTSOUTHASIA/Resources/223497-1105737253588/IndusWatersTreaty1960.pdf

[16] Dr. Kishor Uprety, World Bank Legal Department, Transboundary water governance: Lessons for South Asia, 3 September 2012. "The hydro-diplomacy throughout Bangladesh, India, Nepal, and Pakistan has been acrimonious, at best. The division of the basins resulting from decolonization, subsequently complicated by political changes, created friction among the riparians of the Indus and the Ganges, leading to intrastate and interstate conflicts. Indeed, the Indo-Pakistan Indus Treaty (1960), the Indo-Nepal treaties regarding the Kosi (1954), the Gandaki (1959), and the Mahakali (1996), and the Indo-Bangladesh Ganges Treaty (1996) have markedly suffered during implementation." http://www.globalwaterforum.org/2012/09/03/transboundary-water-governance-lessons-for-south-asia

[17] Dr. Kishor Uprety, ibid.

[18] UNEP, Hydropolitical Vulnerability and Resilience along International Waters: Latin America

and the Caribbean, 2007. http://www.unep.org/pdf/hydropolitical_LA.pdf

[19] Treaty between Argentina and Uruguay on the La Plata River and Its Maritime Outlet, Montevideo, November 19, 1973; 13 *ILM* 1974, 251-267.

[20] M. Valente, "Coming Together to Preserve the La Plata Basin", 22 November 2011. http://upsidedownworld.org/main/news-briefs-archives-68/3317-south-america-coming-together-to-preserve-the-la-plata-basin

[21] The United Nations Economic Commission for Europe Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE Water Convention), adopted in Helsinki, Finland on 17 March 1992. Soon to celebrate its 20th anniversary, the UNECE Water Convention has some 39 state parties and the European Union are participating in the Convention (Turkmenistan will be the thirty-ninth Party to the Convention on 27 November 2012). Among these States Parties there is increased awareness of the necessity for transboundary cooperation to ensure that transboundary waters are used reasonably and equitably, and that transboundary impacts from pollution and development are prevented or at least reduced. http://www.unece.org/fileadmin/DAM/env/water/pdf/watercon.pdf

[22] EU Water Framework Directive, Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327,22.12.2000). http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2000:327:0001:0072:EN:PDF

[23] GWP, "Tools for Better Transboundary Cooperation in Central and Eastern Europe". http://www.gwp.org/en/gwp-in-action/Central-and-Eastern-Europe/News-and-Activities-GWP-Central-and-Eastern-Europe/GWP-CEE-launches-a-new-project/ See also, "Lessons from transboundary management of the Dniester River." http://www.gwp.org/en/GWP-CEE/gwp-cee-in-action/news-and-activities/Lessons-from-transboundary-management-of-the-Dniester-River/

[24] Dr Danka Thalmeinerova, GWP Knowledge Officer. http://www.gwp.org/en/gwp-in-action/Central-and-Eastern-Europe/News-and-Activities-GWP-Central-and-Eastern-Europe/GWP-contributes-to-UNECE-transboundary-process/

[25] GWP has defined IWRM as "a process which promotes the coordinated development and management of water, land, and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems." http://www.gwp.org/The-Challenge/What-is-IWRM/

[26] World Bank Report, "Water for Growth and Development." David Grey and Claudia W. Sadoff in Thematic Documents of the IV World Water Forum. Comision Nacional del Agua: Mexico City (2006 http://water.worldbank.org/publications/water-growth-and-development See also Sadoff, C., & Grey, D. (2002). Beyond The River: The Benefits Of Cooperation On International Rivers. Water Policy, 4, 389-403.

[27] See, for instance, Ganoulis J, Aureli A and J Fried (eds). 2011. Transboundary Water Resources Management, A Multidisciplinary Approach. Wiley-VCH; Earle A, Jagerskog A and J Ojendal. 2010. Transboundary Water Management: Principles and Practice. Earthscan; Dinar, A et al, Bridges over Water: Understanding Transboundary Water Conflict, Negotiation and Cooperation. *World Scientific, 2007*.See also: United Nations World Water Development Report (WWDR). 2009. Water in a Changing World. Third Edition. http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/wwdr/wwdr3-2009/downloads-wwdr3/ WWDR. 2012. Managing Water under Uncertainty and Risk. Fourth Edition. http://www.unesco.org/new/en/naturalsciences/environment/water/wwap/wwdr/wwdr4-2012/. GWP and INBO. 2009. A Handbook for Integrated Water Resources Management in Basins. http://www.gwptoolbox.org/images/stories/Docs/gwp_inbo%20handbook%20for%20iwrm%20in%20basins_eng.pdf GWP and INBO 2012. Handbook for Integrated Water Resources Manage in Transboundary

Basins of Rivers, Lakes and Aquifers. http://www.gwp.org/Global/About%20GWP/Publications/INBO-GWP%20Transboundary%20Handbook/MGIREB-UK-2012_Web.pdf World Bank. 2010. Sustaining water for all in a changing climate: World Bank Group Implementation Progress Report. http://water.worldbank.org/water/publications/sustaining-water-all-changing-climate-world-bank-group-implementation-progress-report.

[28] See UN Resolution 65/154. http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/65/154.

[29] Extract from a speech by the then President of the ICJ, Judge Owada, to the United Nations General Assembly on 26 October 2011. http://www.icj-cij.org/presscom/files/5/16735.pdf.

[30] Jennings, R. and Watts, A, 1996, Oppenheim's International Law, Ninth Edition, Volume 1, Introduction and Part 1, Pearson, p.4.

[31] The Charter of the United Nations was signed on 26 June 1945 and entered into force on 24 October 1945. 1369 U.N.T.S. 181. http://www.un.org/aboutun/charter/

[32] For a discussion of the concept of the rule of law see Wouters P, note [13] above, p.363 citing Lord Bingham.

[33] Rio+20, the United Nations Conference on Sustainable Development was convened 20 to 22 June 2012. http://www.uncsd2012.org/rio20/. Paragraph 7 of the resolution (see above note 1) provides, "We reaffirm that we continue to be guided by the purposes and principles of the Charter of the United Nations, with full respect for international law and its principles." Paragraph 8 states "We also reaffirm the importance of freedom, peace and security, respect for all human rights, including the right to development and the right to an adequate standard of living, including the right to food, the rule of law, gender equality, women's empowerment, and the overall commitment to just and democratic societies for development."

[34] Despite common misperceptions, international law is not a collection of national state laws; international law is a different system of law entirely, with distinct origins. National law is created according to domestic constitutional rules, in most cases by parliaments. In contrast to that, international law is supranational in nature, with sovereign nation States as the key actors – a "*network of relationships existing primarily, if not exclusively, between states recognizing certain common principles and ways of doing things*". While international law is connected to national law, for example, compliance with rules of international law are tested at national levels, the rules are created in different ways with international law recognizing a variety of sources, such as international conventions, bilateral or multilateral, and international custom. See Shaw, M., N., 2003, International Law, Fifth Edition, Cambridge University Press; and see Art. 38(1) of the Statute of the International Court of Justice for a list of the sources of international law. http://www.icj-cij.org/documents/index.php?p1=4&p2=2&p3=0.

[35] This paper focuses on international water resources cooperation, which must be considered broadly, within the context of social, environmental and economic issues. From an international law perspective this covers a broad spectrum of legal rights and duties; the aim should be for a comprehensive "read-across" the rules of international law that impact on the water challenge.

[36] "Global governance requires localising global issues," Director-General Pascal Lamy, in a speech at the Oxford Martin School, Oxford University on 8 March 2012, said: "In the absence of a truly global government, global governance results from the action of sovereign States. It is inter-national. Between nations. In other words, global governance is the globalization of local governance." http://www.wto.org/english/news_e/sppl_e/sppl220_e.htm

[37] See Schrijver, N., "The Impact of Climate Change: Challenges for International Law", in Fastenrath, U. et al (eds) From Bilateralism to Community Interest. Essays in Honour of Judge Bruno Simma, Oxford University Press (2011), pp. 1296-1297.

[38] http://www.unwater.org/events_watersec2012.html

[39] Roundtable on Water Security, Remarks by Hillary Rodham Clinton, Secretary of State, United Nations, New York City, 25 September 2012. http://www.state.gov/secretary/rm/2012/09/198179.htm.

[40] See Tams, C.J., "Individual States as Guardians of Community Interests", in Fastenrath, U. et al (eds) From Bilateralism to Community Interest. Essays in Honour of Judge Bruno Simma, Oxford University Press (2011), pp. 379-405, at 399, where he concludes that international law has evolved considerably and now embraces accommodating community interests.

[41] Bingham T. 2010. The Rule of Law, Penguin, p.129.

[42] Wouters P., see above note [13], p.365-366.

[43] 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (UN, G.A. Res. 51/206, 51 U.N. GAOR Supp. No.49, at 341, UN Doc. A/51/49 (Vol. I) (1996). http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf

See also UNGA, 51st session, 99th Plenary Meeting, UNDocA/51/229, 21 May 1997). http://www.un.org/ga/search/view_doc.asp?symbol=A/res/51/229

[44] UN Resolution A/RES/64/292. http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/64/292 See also UNGA, 64th session, 108th Plenary Meeting, UN Doc A/64/PV.108, 28 July 2010. http://www.un.org/ga/search/view_doc.asp?symbol=A/64/PV.108

[45] UN Resolution 66/104 on the law of transboundary aquifers under which the UN GA "*encourages* the States concerned to make appropriate bilateral or regional arrangements for the proper management of their transboundary aquifers, taking into account the provisions of the draft articles annexed to its resolution 63/124 " and "to include in the provisional agenda of its sixty-eighth session the item entitled "The law of transboundary aquifers" and, in the light of written comments of Governments, as well as views expressed in the debates of the Sixth Committee held at its sixty-third and sixty-sixth sessions, to continue to examine, inter alia, the question of the final form that might be given to the draft articles." 9 December 2011. http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/66/104

[46] SADC Revised Protocol on Shared Watercourses in the Southern African Development Community, Windhoek, Aug. 7, 2000, 40 I.L.M. p. 317 (2001). http://www.sadc.int/documents-publications/show/Revised_Protocol_Shared_Watercourses.pdf The 2000 Revised Protocol was signed by Angola, Botswana, Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

[47] Report of the Economic and Social Commission for Asia and the Pacific, Sixth Session, UN Doc, E/ESCAP/MCED (6)/5, para 27, 9. http://www.unescap.org/esd/mced6/documents/Documents/MCED6_14E.pdf

[48] See D. Ziganshina, PhD dissertation (2012), "International Water Law in the Aral Sea Basin: Norms and Process", which provides an analytical framework for assessing the effectiveness of international law. (on file with the author).

[49] . Wolfensohn, 'Rule of Law Central to Fighting Poverty', Speech given at World Bank Conference, Petersburg, Russia 2001. http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:20011894~menuPK:34463~pagePK:34370~piPK:34424~theSitePK:4607,00.html Wolfensohn's comprehensive development framework which attempted to fit law and judicial arrangements within a more comprehensive outlook on global development has played an important part in the World Bank's approach to the process of development and its demands in recent years.

[50] R. B. Zoellick, 'Securing Development', Speech given at the United States Institute of Peace 'Passing the Baton Conference', Washington, DC: 2009. http://web.worldbank.org/WBSITE/

EXTERNAL/EXTABOUTUS/ORGANIZATION/EXTPRESIDENT2007/0,,contentMDK:22029111~menuPK:64822279~pagePK:64821878~piPK:64821912~theSitePK:3916065,00.html The World Bank actively addresses transboundary water issues through its water resources and related international development work.

[51] Jim Yong Kim's statement to the World Bank's Board 11 April 2012. http://www.treasury.gov/press-center/press-releases/Pages/tg1530.aspx

[52] Giordano M and A.T. Wolf. The World's International Freshwater Agreements: Historical Developments and Future Opportunities. http://www.transboundarywaters.orst.edu/publications/atlas/atlas_pdf/2_WorldsAgreements_atlas.pdf

[53] As of 1 October 2012, 28 states have signed up for the UNWC; Chad is the 28th State party to the Convention, which must be ratified by 35 countries to enter into force. Benin, Denmark and Luxemburg completed their accession process earlier this year. The Italian Senate ratified it in August.; the UK signed up in June 2012 and Benin in July 2012; on 30 April 2012 Denmark acceded to the UNWC following six other supporting countries over the past two years – Burkina Faso, France, and Morocco in 2011; Greece, Guinea-Bissau, and Nigeria in 2010. State parties to the UNWC include: Finland, Germany, Hungary, Iraq, Jordan, Lebanon, Libya, Namibia, The Netherlands, Norway, Portugal, Qatar, South Africa, Spain, Sweden, Syria, Tunisia, and Uzbekistan. In addition, five nations have signed but not yet ratified the Convention: Côte d'Ivoire, Luxembourg, Paraguay, Venezuela, and Yemen. http://www.gcint.org/news/green-cross-commends-chad%E2%80%99s-ratification-un-watercourses-convention

[54] WWF heads an international campaign for the entry into force of the UNWC. In its view, "The Convention offers legal stability and consistency for preventing and dealing with water-related disputes, while providing a flexible instrument in support of interstate cooperation and which can facilitate adaptive water management in response to ever-changing conditions like the effects of climate change." Further it is argued that the entry into force of the UNWC "is vital for enabling its integration with existing water-related MEAs, thereby facilitating their implementation", considered an essential input to the Rio+20 discussions. This work has led to a number of States signing up to the UNWC, which raises the likelihood of its entry into force in the foreseeable future. http://wwf.panda.org/what_we_do/how_we_work/policy/conventions/water_conventions/un_watercourses_convention

[55] See UNSGAB, the Hashimoto Action Plan II. http://www.unsgab.org/HAP-II/HAP-II_en.pdf. The Plan calls for the following: "Sustainable management of water at the basin level often requires both IWRM approach and transboundary cooperation. While there are numerous regional and basin-level legal agreements on transboundary waters, there are also many cases where no cooperative agreements exist. An imperative need exists for an overarching layer of international water law provided by the UN convention on transboundary water management."

[56] Wouters P., see above note [13], p.380.

[57] This includes a large body of multi-lateral environmental agreements such as the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD), the Convention to Combat Desertification (CCD), the Convention on International Trade of Endangered Fauna and Flora (CITES), the Ramsar Convention to protect Mangroves and Wetlands, to name a few.

[58] For example, under the 1999 Rhine Convention, Article 2 entitled 'Scope', provides that the Convention applies to 'a) the Rhine; b) ground water interacting with the Rhine; c) aquatic and terrestrial ecosystems which interact or could again interact with the Rhine; d) the Rhine catchment area, insofar as its pollution by noxious substances adversely affects the Rhine; e) The Rhine catchment area, insofar as it is of importance for flood prevention and protection along the Rhine'. Thus, the legal issue of 'scope' under this agreement provides geological and ecological definitions, which are quite extensive and may be in need of scientific scrutiny in the event of any

future legal claim. See Convention on the Protection of the Rhine, Rotterdam, 22 January 1998, in force since 12 April 1999, http://faolex.fao.org/docs/pdf/mul17477.pdf. This issue is currently re-examined in the context of ecosystems, with some questioning whether a watercourse approach includes ecosystems; Fox and Sneddon argue "that watercourses support the sovereign territorial ideal, while drainage basins or river ecosystems undermine it"; see p. 246, Fox, C.A. and C. Sneddon, "Transboundary River Basin Agreements In The Mekong And Zambezi Basins: Enhancing Environmental Security Or Securitizing The Environment?", Int Environ Agreements (2007) 7:237–261. http://bscw-app1.let.ethz.ch/pub/nj_bscw.cgi/d11577118/Fox_2007_Transboundary%20river.pdf.

[59] The 63rd session of the UN General Assembly adopted Resolution A/RES/63/124 on the Law of Transboundary Aquifers by consensus, 11 December 2008. The UN GA "*Takes note* of the draft articles on the law of transboundary aquifers, presented by the Commission, the text of which is annexed to the present resolution, and commends them to the attention of Governments without prejudice to the question of their future adoption or other appropriate action;" and agreed "to include in the provisional agenda of its sixty-sixth session an item entitled "The law of transboundary aquifers" with a view to examining, inter alia, the question of the form that might be given to the draft articles." Whether or not this draft will go forward as an international convention remains to be seen. http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/63/124&Lang=E On 9 December 2011, the General Assembly adopted Resolution 66/104 on this matter (http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/66/104) in which it encourages "States concerned to make appropriate bilateral or regional arrangements for the proper management of their transboundary aquifers taking into account the provisions of the draft articles" (para. 1). It further put the matter on the agenda of its sixty-eighth session and decided to continue to examine the final form the draft articles might be given (para. 3).

[60] The Helsinki Rules on the Uses of the Waters of International Rivers, the "ILA Helsinki Rules" are a set of non-binding rules, which were adopted by the International Law Association at the 52d conference, held at Helsinki in August 1966. The Report of the Committee on the Uses of the Waters of International Rivers (1967), which sets forth the rules, is available at http://www.internationalwaterlaw.org/documents/intldocs/helsinki_rules.html

[61] See discussion in Brunnee, J., & Toope, S. J. (1997). Environmental Security and Freshwater Resources: Ecosystem Regime Building. The American Journal of International Law, 91(1), 26–59. See also McIntyre, O. (2004). The Emergence Of An "Ecosystem Approach" To The Protection Of International Watercourses Under International Law. Review of European Community & International Environmental Law, 13(1), 1-14.

[62] See below section 3 on page [12] for the full text of this article.

[63] UNWC arts 6 and 6 (3). See note [106] for the text of Article 6.

[64] UNWC arts 6 and 10.

[65] UNWC art. 10(2). See also Wouters, P. et al. 2005. Sharing Transboundary Waters – An Integrated Assessment of Equitable Entitlement: The Legal Assessment Model. International Hydrological Programme, Session VI, Technical Documents in Hydrology No. 74, UNESCO. http://unesdoc.unesco.org/images/0013/001397/139794e.pdf

[66] See Wouters, P. et al. 2003. Transforming Potential Conflict into Cooperation Potential: The Role of International Water Law (UNESCO PCCP). http://unesdoc.unesco.org/images/0013/001332/133258e.pdf

[67] UNWC art. 7.

[68] UNWC art. 20.

[69] UN Resolution, The Human Right To Water And Sanitation, A/64/L.63/Rev.1*, 26 July 2010 (see also note [52] above). This UN Resolution is very concise and reproduced here for reference.

1. *Declares* the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights;

2. *Calls upon* States and international organizations to provide financial resources, capacity-building and technology transfer, through international assistance and cooperation, in particular to developing countries, in order to scale up efforts to provide safe, clean, accessible and affordable drinking water and sanitation for all;

3. *Welcomes* the decision by the Human Rights Council to request that the independent expert on the issue of human rights obligations related to access to safe drinking water and sanitation present an annual report to the General Assembly,17 and encourages her to continue working on all aspects of her mandate and, in consultation with all relevant United Nations agencies, funds, and programmes, to include in her report to the Assembly, at its sixty-sixth session, the principal challenges related to the realization of the human right to safe and clean drinking water and sanitation and their impact on the achievement of Millennium Development Goals.

[70] ICJ (2010). *Case Concerning Pulp Mills on the River Uruguay (Argentina* v. *Uruguay),* General List no. 135 (2010). http://www.icj-cij.org/docket/files/135/15877.pdf. The dispute between Argentina and Uruguay concerned the planned construction, authorized by Uruguay, of the CMB (ENCE) pulp mill, and the construction and commissioning, also authorized by Uruguay, of the Orion (Botnia) pulp mill on the River Uruguay. The Court found that Uruguay had breached its procedural obligations to co-operate with Argentina and the administrative Commission of the River Uruguay during the development of plans for the CMB (ENCE) and Orion (Botnia) pulp mills. The Court also declared that Uruguay had not breached its substantive obligations for the protection of the environment provided for by the Statute of the River Uruguay by authorizing the construction and commissioning of the Orion (Botnia) mill. See McIntyre, O., "The Proceduralisation and Growing Maturity of International Water Law" (analysing the Pulp Mills case), 22 Journal of Environmental Law (2010), pp. 475-497. See also Ligouri, T. 'The principle of good faith in the Argentina-Uruguay pulp mills dispute", 20 Journal of Water Law (2009) 70.

[71] Wouters P. 2006. What lessons from Europe? A Comparative Analysis of the Legal Frameworks That Govern Europe's Transboundary Waters. 36 ELR, 4-2006, 10290-10309, p. 10301.

[72] UNWC art. 11.

[73] UNWC arts 12-16 and 18-19. These provisions cover a range issues ranging from timing of notification, response to notification, and what should occur in the absence of notification, or where there is need for urgent implementation of planned measures.

[74] UNWC art. 17.

[75] UNWC art. 24.

[76] Tarlock points out: "…to generate the trust necessary to alleviate fears, a fair allocation must be augmented by adaptive, integrated management institutions" adding that: "More permanent, functioning basin management institutions are needed with the capacity to build sufficient trust among the parties to permit adaptation to new conditions and demands for water use." Tarlock A.D., Water Security, Fear Mitigation and International Law, Hamline Law Review, Vol. 31:3, 2008; p. 707 and p. 724.

[77] Handbook for Integrated Water Resources Management in Basins (2009); The Handbook for Integrated Water Resources Management in Transboundary Basins of Rivers, Lakes and Aquifers (2012); see note [32] above. See also the UNESCO study, Institutions For International Freshwater Management, Report, Stefano Burchi and Melvin Spreij, *For the Food and Agriculture*

Organization of the United Nations (FAO) Development Law Service FAO Legal Office. http://webworld.unesco.org/water/wwap/pccp/cd/pdf/legal_tools/institutions_for_int_freshwater_management_2.pdf

[78] [The current Special Rapporteur Ms. de Albuquerque (UN Special Rapporteur on the human right to safe drinking water and sanitation) asserts, "States are wasting their time on re-negotiating their own decisions rather than moving forward to implement the right to water and sanitation for all" and challenged the proposal by some governments (Canada and the United Kingdom) to remove an explicit reference to the right to water and sanitation for all from the first draft of the 'Rio+20 UN Conference on Sustainable Development' outcome document. See http://www.unric.org/en/latest-un-buzz/27436-rio20-do-not-betray-your-commitments-on-the-human-right-to-water-and-sanitation-united-nations-water-and-sanitation-expert-catarina-de-albuquerque.]

[79] See the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus, Denmark, 25 June 1998), which entered into force on 30 October 2001. http://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-13&chapter=27&lang=en.

[80] See Geneva Strategy and Framework for Monitoring Compliance with Agreements on Transboundary Waters: Elements of a Proposed Compliance Review Procedure (Expert's Report), U.N. Doc. MP. WAT/2000/5 and Add. 1.

[81] See Wouters, P., Universal and Regional Approaches to Resolving International Disputes: What Lessons Learned From State Practice, in Resolution of International Water Disputes (Int'l Bureau of the Permanent Court of Arbitration ed., Kluwer Law Int'l).

[82] Art. 2(3) of the UN Charter provides that: "All Members shall settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered."

[83] See, e.g., Merrills, J.G. 1991, International Dispute Settlement; International Investments and the Protection of the Environment: The Role of Dispute Resolution Mechanisms (Annex I: Guidelines for Negotiating and Drafting Dispute Settlement Clauses for International Environmental Agreements) (Int'l Bureau of the Permanent Court of Arbitration ed., Kluwer Law Int'l 2000). See also Romano, C.P.R. 2000. The Peaceful Settlement of International Environmental Disputes: A Pragmatic Approach (Kluwer Law Int'l).

[84] UN Charter, art. 33.

[85] See, e.g., Tanzi, A. and Arcari, M. 2001. The United Nations Convention on the Law of International Watercourse (Kluwer Law Int'l); and Bourne, C.B. 1971. Mediation, Conciliation and Adjudication in the Settlement of International Draining Basin Disputes, 9 Canadian Y.B. of Int't L. 114 (1971), reprinted in Wouters, P.K. 1997. International Water Law: Selected Writings of Professor Charles B. Bourne 197 (Kluwer Law Int'l).

[86] The UNWC's provision on "Settlement of Disputes" provides, inter alia: "In the event of a dispute between two or more Parties concerning the interpretation or application of the present Convention, the Parties concerned shall, in the absence of an applicable agreement between them, seek a settlement of the dispute by peaceful means in accordance with the following provisions." Under art. 33(3) and (4) the dispute shall be submitted to "impartial fact-finding" where the parties are unable to resolve the matter through diplomatic means. A close reading of this provision suggests that the procedure is more akin to compulsory conciliation, rather than open-ended fact-finding. Under art. 33(8): "The Commission shall adopt its report by a majority vote, unless it is a single-member Commission, and shall submit that report to the Parties concerned setting forth its findings and the reasons therefore and such recommendation

as it deems appropriate for an equitable solution of the dispute, which the Parties concerned shall consider in good faith."

[87] See id. art. 33(1). In the commentary, the International Law Commission explained that the procedure set forth "is to facilitate the resolution of the dispute through the objective knowledge of the facts. The information to be gathered is intended to permit the States concerned to resolve the dispute in an amicable and expeditious manner and to prevent the dispute from escalating." Fact-finding as a means of conflict resolution has received considerable attention by states. For example, the U.N. General Assembly has adopted a "Declaration on Fact-finding by the United Nations in the Field of the Maintenance of International Peace and Security," in which it defines fact-finding to mean "acquiring detailed knowledge about the factual circumstances of any dispute or situation." U.N. Doc. A/RES/46/59 (1991). http://www.un.org/documents/ga/res/46/a46r059.htm

[88] UNWC, art. 33(8).

[89] See the table on p. 13 for examples of such disputes.

[90] Press Release SG/SM/8139 OBV/262, http://www.un.org/News/Press/docs/2002/sgsm8139.doc.htm.

[91] Opening Key Note Address, Pre-MRC Summit International Conference, Mr. Ben Braga, Vice-President of the World Water Council (2 April 2010), Hua Hin, Thailand *"Transboundary Water Resources Management in a Changing World"*. http://www.mrcsummit2010.org/Presentations/Keynote1_B.Braga-Transboundary-water-mgt.pdf

[92] 2010 GWP Consulting Partners Meeting: Water security and regional economic development Exploring the role of water security in regional economic development, Keynote address by Mohamed AIT KADI, Chair of the GWP Technical Committee. http://www.gwp.org/PageFiles/4/Keynote%20by%20Ait%20Kadi%20at%202010%20GWP%20CP%20Meeting.pdf.

[93] Article 6 – Factors relevant to equitable and reasonable utilization

1. Utilization of an international watercourse in an equitable and reasonable manner within the meaning of article 5 requires taking into account all relevant factors and circumstances, including:
   (a) Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;
   (b) The social and economic needs of the watercourse States concerned;
   (c) The population dependent on the watercourse in each watercourse State;
   (d) The effects of the use or uses of the watercourses in one watercourse State on other watercourse States;
   (e) Existing and potential uses of the watercourse;
   (f) Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect;
   (g) The availability of alternatives, of comparable value, to a particular planned or existing use.
2. In the application of article 5 or paragraph 1 of this article, watercourse States concerned shall, when the need arises, enter into consultations in a spirit of cooperation.
3. The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is a reasonable and equitable use, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.

[94] Article IV of the Helsinki Rules provides, "Each basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin." *ILA, Report of the Fifty-Second Conference*, Helsinki, 1966, "Uses of the Waters of International Rivers", 447-533 (see above note [73]). Slavko Bogdanovic, *International Law of*

Water Resources. Contribution of the International Law Association (1954-2000), (2001).

[95] For more on how the rule of equitable and reasonable use is implemented, including a more comprehensive approach to "all relevant factors" see Annex II to this paper, excerpted from Wouters, P. *et al*. (2005). *Sharing Transboundary Waters – An Integrated Assessment of Equitable Entitlement: The Legal Assessment Model*. IHP-VI, Technical Documents in Hydrology No. 74. Paris: UNESCO (see above note [78]).

[96] "The main idea of the concept of benefit-sharing is to move from the sharing of water quantities to the sharing of the benefits the users receive from its use," I. Dombrowsky, "Benefit-sharing in transboundary water management through intra-water sector issue linkage?". http://www.worldwaterweek.org/documents/Resources/Best/Ines_Dombrowsky.pdf. This research demonstrated how issue linkage facilitated cooperation; in each case of cooperation, international agreements were concluded by the state parties.

[97] The Columbia River Treaty Protocol. http://www.cbt.org/crt/assets/pdfs/1964_treaty_and_protocol.pdf?title=0&byline=0&portrait=0

[98] MRC Hua Hin Declaration, "Meeting the Needs, Keeping the Balance: Towards Sustainable Development of the Mekong River Basin", 5 April 2010,http://www.mrcsummit2010.org/MRC-Hua-Hin-Declaration-05-Apr-10.pdf.

[99] On benefits-sharing, see:
Sadoff C.W. and D. Grey. 2005. Cooperation on International Rivers, A Continuum for Securing and Sharing Benefits. Water International, Volume 30, No. 4;
Sadoff C., Greiber T., Smith M. and G. Bergkamp. 2008. Share – Managing water across boundaries. IUCN, Gland, Switzerland. http://www.iucn.org/dbtw-wpd/edocs/2008-016.pdf;
UN Water. 2008. Transboundary Waters: Sharing Benefits, Sharing Responsibilities. UNW Water Task Force on Transboundary Waters. http://www.unwater.org/downloads/UNW_TRANSBOUNDARY.pdf;
Dombrowsky I, "Revisiting the Potential for Benefit Sharing in the Management of Trans-Boundary Rivers" (2009) 11 Water Policy 125.

[100] Article 8 UNWC provides, "Watercourse States shall cooperate on the basis of sovereign equality, territorial integrity and *mutual benefit* in order to attain optimal utilization and adequate protection of an international watercourse".

[101] See O. McIntyre at note 83 [above].

[102] See Salman. M.A. Salman, "International Water Disputes: *A New Breed of Claims, Claimants, and Settlement Institutions*", International Water Resources Association, *Water International*, Volume 31, Number 1, Pages 2–11, (2006).

[103] PCIJ (Permanent Court of International Justice) (1929). *Territorial Jurisdiction of the International Commission of the River Oder (United Kingdom, Czechoslovakia, Denmark, France, Germany, Sweden* v. *Poland)*, PCIJ (ser A) No. 23 (1929).

[104] ICJ (International Court of Justice) (1957). *Lake Lanoux Arbitration (France* v. *Spain)*, 24 ILR 101.

[105] ICJ (1998). *Case Concerning the Gabcikovo-Nagymaros Project (Hungary* v. *Slovakia)*, General List no. 92 (1997), 37 ILM 162 available at: http://www.icj-cij.org/docket/files/92/7375.pdf

[106] ICJ (2009). *Dispute Regarding Navigational and Related Rights (Costa Rica* v. *Nicaragua)*, General List no. 133 (2009). http://www.icj-cij.org/docket/files/133/15321.pdf

[107] *Case Concerning Pulp Mills on the River Uruguay (Argentina* v. *Uruguay)*; see above note [83].

[108] Indus Waters Kishenganga Arbitration before the Court of Arbitration Constituted in Accordance with the Indus Waters Treaty 1960 between the Government of India and the Government of Pakistan. The matter is still pending before the arbitral tribunal but an order of interim measures was given on 23 September 2011. http://www.pca-cpa.org/showpage.asp?pag_id=1392

[109] Case Concerning the Gabcíkovo-Nagymaros Project, para. 85 (see above note [118]).

[110] P. Wouters and D. Ziganshina, "Tackling the Global Water Crisis: Unlocking International Law as fundamental to the Peaceful Management of the World's Shared Transboundary Waters – Introducing the H20 Paradigm", in *in* Q Grafton and K Hussy (eds) *Water Resources Planning and Management: Challenges and Solutions* (Cambridge University Press, 2010).

[111] Stephen McCaffrey, The Law of International Watercourses, Second Edition, Oxford University Press, 2007, p. 60-61.

[112] Agreement between the Republic of Zimbabwe and the Republic of Zambia concerning the utilisation of the Zambezi River, Harare, 28 July 1987. http://www.fao.org/docrep/W7414B/w7414b17.htm

[113] For a history of the Zambezi River Authority see http://www.zaraho.org.zm/history.html

[114] SADC Revised Protocol, preamble.

[115] UNWC art. 3. See also P. Wouters, Universal and Regional Approaches to Resolving International Water Disputes: What Lessons Learned from State Practice? at note [94] above.

[116] Agreement On The Establishment Of The Zambezi Watercourse Commission, which entered into force on 26 June 2011. http://www.icp-confluence-sadc.org/sites/default/files/ZAMCOM_AGREEMENT_2004.pdf.

[117] ZAMCOM Agreement art. 5.

[118] One report stated, "Zambia will not sign the Zambezi Watercourse Commission (ZAMCOM) agreement before the 16-17 August SADC Summit deadline it had given itself because government has not reached a consensus on the matter with the country's various stakeholders." *Southern African News Features* (August 2004) Zambia delays signing ZAMCOM as it seeks national consensus, by Amos Chanda. http://www.sardc.net/editorial/newsfeature/04750804.htm

[119] Personal communication and L. Susteric, 2007, Multilateral versus bilateral agreements for the establishment of river based organizations: comparison of legal, economic and social benefits in the Zambian experience. http://www.uni-siegen.de/zew/publikationen/volume0607/sustersic.pdf [Confirm this source is correct]

[120] http://www.icp-confluence-sadc.org/rbo/66.

[121] The economic value of basin wide cooperation, in terms of additional generation with minimal investment, is estimated at $585 million over a 30-year period. See The Zambezi River Basin, *A Multi-Sector Investment Opportunities Analysis* Report, The World Bank (June 2010), p. 22. http://siteresources.worldbank.org/INTAFRICA/Resources/Zambezi_MSIOA_-_Vol_1_-_Summary_Report.pdf

[122] Ibid. p. 24.

[123] *Water Resources Management Act* [No. 21 of 2011] 265; Date of Assent: 15th April, 2011. http://www.parliament.gov.zm/index.php?option=com_docman&task=doc_details&gid=878&Itemid=113.

[124] The Niger drains an area of 2,200,000 km^2, divided among its ten basin States as follows: Mali

28.2%, Nigeria 26.4%, Niger 22.3%, Algeria 6.7 %, Guinea 4.3%, Cameroon 4.1%, Burkina Faso 3.6%, Benin 2.3%, Côte d'Ivoire 1.1%, and Chad 0.9%.

[125] Maluwa, T., "Some International Legal Aspects of the Regulation and Utilization of the Niger under the Niamey Treaties", 40-41 *RHDI* 1987-1988, 157-177, 158. The 1885 Treaty of Berlin "internationalized" navigation on the Niger and Congo Rivers along the lines set out by the Congress of Vienna in 1815. Articles 108-116 of the Final Act of that Congress established an absolute priority of navigation on these rivers, the predominant use at the time.

[126] Act Regarding Navigation and Economic Co-operation Between the States of the Niger Basin, Niamey, October 26, 1963; entry into force February 1, 1966; 587 *UNTS* 1967, 9-17; *R & S* (XI), 5629-5632.

[127] Article 3 of the Act of Niamey, 1963, provides for complete freedom of navigation.

[128] Preamble, Act of Niamey 1963.

[129] Article 2(2) defines utilization as "navigation, agricultural and industrial uses, and collection of the products of flora and fauna".

[130] Article 2, *ibid*.

[131] Agreement Concerning the Niger River Commission and the Navigation and Transport on the River Niger, Niamey, November 25, 1964; entry into force, April 12, 1966; 587 *UNTS* 1967, 19-33; *R & S* (XI), 5648-5654. Ratification of the English Text of the Agreement Concerning the Niger River Commission and the Navigation and Transport on the River Niger of November 25, 1964, Effected by Procès-Verbal, Niamey, January 3, 1968; entry into force January 3, 1968, *R & S* (XXV), 292.

[132] Article 3, 1964 Agreement.

[133] Convention Establishing the Niger River Basin Authority, Faranah, Guinea, November 21, 1980, and Protocol on the Development Fund of the Niger Basin, Niamey, Niger, November 21, 1980; entry into force; text in Niger Basin Authority, Niamey, Niger.

[134] The Authority is comprised of the Summit of Heads of State and Government; the Council of Ministers; a Technical Committee of Experts; an Executive Secretariat; and Specialized Organs.

[135] Article 12 of the 1964 Agreement, retained in the 1980 Convention. It is clear that the numerous intra-state river basin authorities have sometimes overlapped with and complicated the work of the international commissions.

[136] Article 4(1), 1980 Agreement.

[137] Godana, B.A., *Africa's Shared Water Resources: Legal and Institutional Aspects of the Nile, Niger, and Senegal River Systems*. (1985) Geneva, Graduate Institute of International Studies. 370 pp., at 217.

[138] Revised Convention creating the Niger Basin Authority, signed at N'Djamena on October 29 1987 (information on its entry into force is not available). Source: FAO. 1997. *Treaties Concerning the Non-Navigational Uses of International Watercourses: Africa*. Legislative Study 61, Rome, pp. 62–70, and FAOLEX database http://faolex.fao.org/faolex/index.htm.

[139] "Challenges are immense and can only be addressed on one condition: we must work together. Only a joint and coordinated action can be effective in ensuring a concerted, fair, reasonable, and sustainable management of resources of the Niger River Basin, in the spirit of the Shared Vision that has united us in recent years. The United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (1997) is the only legal instrument of universal scope governing the use, management, and protection of shared watercourses. Acceding to the

Convention will strengthen the scope and application of the principles of the Niger Basin's Water Charter, extending to all the international waterways of our territories the governance and legal security already enjoyed by those waterways within the Niger River Basin.

This is why we solemnly call on our states to ratify the 1997 Convention and encourage the Executive Secretariat of the Niger Basin Authority to continue its commitment for the sustainable and coordinated management of the river's water resources." Joint Statement of Ministers in charge of Water and Environment of the Niger Basin countries on Access to Water and the Joint Management of the Niger Basin Forum "Solidarity for Water in Niger Basin Countries" October 17 and 18, 2011, in Bamako, Mali. http://www.fondationchirac.eu/wp-content/uploads/The-Final-Declaration-of-Ministers-in-charge-of-Water-and-Environment-of-the-Niger-Basin-Countries-on-Access-to-Water-and-the-Joint-Managment-of-the-Niger-Basin1.pdf

[140] See the February 2012 report by International Alert, in partnership with the Tyndall Centre for Climate Change Research and the School of International Development at the University of East Anglia, on *Climate Change, Water and Conflict in the Niger River Basin*. "The study highlights that the future climate of the Niger Basin remains uncertain, but climate change is expected to have a key influence on water resources and human security through its impact on climate variability and extremes. Climate variations may contribute to social tensions, but are unlikely to fully explain the presence of conflict. Climate change (and variability), in combination with other environmental changes and wider dynamics in society, places stresses on people and their livelihoods. This has the potential to sow (or at least water) the seeds of conflict at different scales." http://www.international-alert.org/news/climate-change-water-and-conflict-niger-river-basin.

[141] Mekong Agreement art. 2.

[142] See Mekong River Commission Basin Development Plan Programme, Phase 2, Assessment of Basin-wide Development Scenarios Main Report April 2011, at http://www.mrcmekong.org/assets/Other-Documents/BDP/Assessment-of-Basin-wide-dev-Scenarios-MainReport-2011.pdf The report begins with the following anchoring in the Mekong Agreement, "A key part of the 1995 Mekong Agreement is the need for the four riparian countries to cooperate in *the formulation of a basin development plan that would be used to identify, categorize and prioritize the projects and programs to seek assistance for and to implement at the basin level*. Further, the countries have agreed to undertake this planning to achieve *the full potential of sustainable benefits to all riparian countries and the prevention of wasteful use of Mekong River Basin waters, with emphasis and preference on joint and/or basin-wide development projects and basin programs*. This implies that basin water planning necessarily should seek to obtain a balance between water resources development and water resources protection, in a way that all the four sovereign countries agree is fair and equitable, expressed in social, economic and environmental terms. The Mekong basin cooperation model is built on *cooperation, coordination and mutual respect*. Development of a common understanding of the transboundary issues is critical to understanding the importance of the environmental and social values and assets of the basin, and how these can be used and managed in the future development."

[143] Art 5, 1995 Mekong Agreement, provides

B. On the mainstream of the Mekong River:

1. During the wet season:
   a) Intra-basin use shall be subject to notification to the Joint Committee.
   b) Inter-basin diversion shall be subject to prior consultation which aims at arriving at an agreement by the Joint Committee.
2. During the dry season:
   a) Intra-basin use shall be subject to prior consultation which aims at arriving at an agreement by the Joint Committee.
   b) Any inter-basin diversion project shall be agreed upon by the Joint Committee through a specific agreement for each project prior to any proposed diversion. However, should there

be a surplus quantity of water available in excess of the proposed uses of all parties in any dry season, verified and unanimously confirmed as such by the Joint Committee. an inter-basin diversion of the surplus could be made subject to prior consultation.

[144] http://www.mrcmekong.org/publications/policies-procedures-and-guidelines/

[145] The prior consultation process under Procedures for Notification, Prior Consultation and Agreement (PNPCA) is a requirement of the Mekong Agreement for countries to jointly review any development project proposed for the mainstream with an aim to reach a consensus on whether or not it should proceed, and if so, under what conditions.

[146] The Xayaburi dam has been proposed on a site located 350 kilometres upstream of Vientiane and 770 kilometres downstream of Jinhong, the last dam of the Chinese cascade of seven dams, including 4 existing dams and 3 planned ones. In terms of mean energy supply, it would be the third largest project among those considered for development on the mainstem in the Lower Mekong Basin. Public participation is considered necessary for the Xayaburi PNPCA prior consultation process as it aims to involve people in a process that may affect their future. Public participation aims to enable information on the full range of perspectives, concerns and expectations of relevant stakeholders, which will be presented to decision makers. http://www.mrcmekong.org/news-and-events/consultations/proposed-xayaburi-hydropower-project-prior-consultation-process/.

[147] The Minutes of the MRC meeting (December 2011) reported on the mechanisms and activities set up after the submission of the proposed Xayaburi hydropower project. Those mechanisms include a MRC Secretariat Task Group, the PNPCA Joint Committee Working Group (JC WG), and Expert Groups. Three meetings were held by the JC WG on PNPCA and several meetings were convened amongst MRC programmes and experts to discuss and review the proposed project on technical aspects. As a result of these teams' work, a Prior Consultation Technical Review Report was finalised and submitted to the Joint Committee at its Thirty-third Meeting which agreed that this Technical Review Report by the MRCS could be disclosed and published on the MRC Website. At the national level there were also national consultative or public participation meetings organised with an aim to allow different stakeholders, especially communities which could possibly be affected from the proposed project, to provide their views on the project. The outcome of the Special Session of the MRC Joint Committee on 19 April 2011 was that the proposed Xayaburi project should be referred to each respective government and the Council for further consideration. http://www.mrcmekong.org/assets/Publications/governance/Minutes-of-the-18th-Council.pdf

[148] "Xayaburi dam may have the Mekong boiling over", Supalak Ganjanakhundee, The Nation, reports from Bangkok, "The Mekong could become a river of conflict if countries, notably those in the lower basin, fail to find an effective mechanism to balance demand with the resources available." Posted 9 May 2012. http://www.thaivisa.com/forum/topic/553611-xayaburi-dam-may-have-the-mekong-boiling-over/

[149] Laos' Xayaburi dam project: Transboundary game changer, *30 April 2012 · In Energy and Water, Millennium Development Goals* reported, "Fortunately, the 1995 treaty that created the MRC includes procedures for notification, prior consultation and agreement (PNPCA) in the case of mainstream dams. Beginning in October 2010 the MRC organized a series of public meetings throughout the region that was much criticized for being inadequate. Nonetheless, when representatives of the four countries met in Vientiane, Laos, in April 2011, after the conclusion of the specified 6-month review period, Vietnam, Cambodia, and even Thailand declined to give their approval, citing concerns about the environmental and socioeconomic impact of the project on their countries. In a subsequent meeting with the Prime Minister of Vietnam and at a meeting of all four prime ministers in the wings of the ASEAN Summit in Bali, in November 2011, the Lao Prime Minister committed to an indefinite suspension of the project pending further studies and agreed to seek funding from Japan for that purpose. The four governments formally ratified the

agreement at a special meeting of the MRC Council on December 8, in Siem Reap, Cambodia. … The suspension of the Xayaburi project was thrown into question when the Thai development company announced in early April that it had signed a contract with its own Lao-registered subsidiary to begin dam construction on March 15, 2012. Not only did environmentalists and civil society cry foul; in an unusual public show of regional discord Vietnam's representative to the MRC charged that the action contradicted both the Lao government's commitment and the subsequent agreement of the MRC Council. Cambodia has raised the possibility of legal action". http://www.globalwaterforum.org/2012/04/30/laos-xayaburi-dam-project-transboundary-game-changer/?goback=.gde_3954330_member_112050558.

[150] The Economist, "A dam on the Mekong Opening the floodgates". A giant dam is about to be built. Protests are about to erupt", 5 May 2012 from the print edition; "Cambodia's water-resources minister, Lim Kean Hor, sent a strong protest letter to Laos. He called for an immediate halt to construction until an independent assessment has been completed. Japan has just agreed to fund a study on Mekong dams, under the auspices of the MRC. Vietnam strongly backs Cambodia, and has repeatedly called for no more dams to be built on the Mekong for at least ten years. The Lao government's failure formally to notify its Mekong partners about the construction, allowing the dam to proceed under the radar, clearly undermines the credibility of the MRC's consultation processes." http://www.economist.com/node/21554253.

[151] Under the Mekong Agreement, in the definitions section, "**Prior consultation**: Timely **notification** plus additional data and information to the Joint Committee as provided in the Rules for Water Utilization and Inter-Basin Diversion under Article 26, that would allow the other member riparians to discuss and evaluate the impact of the **Proposed use** upon their uses of water and any other affects, which is the basis for arriving at an agreement. **Prior consultation** is neither a right to veto the use nor unilateral right to use water by any riparian without taking into account other riparians' rights." http://www.mrcmekong.org/news-and-events/consultations/proposed-xayaburi-hydropower-project-prior-consultation-process/

[152] From the minutes of the meeting, the achievements of the past year, "includes the adoption of the Procedures for Water Quality, the Integrated Water Resources Management-based Basin Development Strategy and the MRC Strategic Plan 2011-2015." It was noted that "the MRC Member Countries are looking forward to taking greater ownership of the MRC through the Strategic Plan 2011-2015. With a target of decentralisation of core functions and financing to the Member Countries, the MRC will gradually reach a matured stage of ownership and responsibility." The minutes also noted, "Even though the consultation of the first proposed use of water on the Mekong mainstream has proved to be a challenging one, it has struck a chord that demonstrates why regional cooperation is crucial." http://www.mrcmekong.org/assets/Publications/governance/Minutes-of-the-18th-Council.pdf

[153] http://www.mrcmekong.org/news-and-events/news/world-bank-provides-us-8-million-to-improve-mekong-resources-management/

[154] http://www.mrcmekong.org/news-and-events/news/germany-commits-8-million-to-protect-mekong-wetlands/

[155] http://www.mrcmekong.org/news-and-events/news/conference-calls-for-innovative-solutions-for-water-energy-and-food-sectors/

[156] Art. 26 – The Joint Committee shall prepare and propose for approval of the Council, inter alia, Rules for Water Utilization and Inter-Basin Diversions pursuant to Articles 5 and 6, including but not limited to: 1) establishing the time frame for the wet and dry seasons; 2) establishing the location of hydrological stations, and determining and maintaining the flow level requirements at each station; 3) setting out criteria for determining surplus quantities of water during the dry season on the mainstream; 4) improving upon the mechanism to monitor intra-basin use; and, 5) setting up a mechanism to monitor inter-basin diversions from the mainstream.

[157] http://www.icpdr.org/main/

[158] http://www.icpdr.org/icpdr-pages/drpc.htm

[159] DRPC art. 2(2).

[160] http://www.icpdr.org/icpdr-pages/expert_groups.htm

[161] Danube Annual Report (2010). http://www.icpdr.org/icpdr-pages/annual_reports.htm

[162] *Case Concerning the Gabcikovo-Nagymaros Project;* see above note [118]. For an in-depth commentary on the case see P. Sands, 'Water and International Law: Science and Evidence in International Litigation', *Environmental Law & Management* 22, no. 4 (2010): 151-61.

[163] *Case Concerning the Gabcikovo-Nagymaros Project* at para. 78, p. 54 (see above note [118]). See also ibid., para. 147, p. 80, where the Court made explicit reference to the text of Article 5(2) of the UNWC.

[164] See P. Sands at note [181] above.

[165] http://www.euwi.net/

[166] http://www.themedpartnership.org/

[167] The Drin: A Strategic Shared Vision; Memorandum of Understanding for the Management of the Extended Transboundary Drin Basin. http://www.unece.org/fileadmin/DAM/oes/MOU/MOU_Drin_Strategic_Shared_vision_Final.pdf

[168] From the MoU preamble, para 14, "Recognizing the need for the Parties to meet the obligations arising from relevant international agreements, particularly the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (March 17, 1992 – hereinafter referred to as "UNECE Water Convention") and its Protocols, the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar, February 2, 1971), the Convention for the Protection of the Mediterranean Sea Against Pollution (16 February 1976) and its Protocols and taking into consideration provisions of the UN Convention on the Law of the Non-Navigational Uses of International Watercourses (May 21, 1997); 15. Conforming to the principles and legal framework of the European Union, in particular the Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.

[169] Tarlock A.D., see above note [89], p. 707.

[170] Article 2, Drin MoU, "to promote joint action for the coordinated integrated management of the shared water resources in the Drin Basin, as a means to safeguard and restore to the extent possible the ecosystems and the services they provide, and to promote sustainable development across the Drin Basin."

[171] *Case Concerning the Gabcikovo-Nagymaros Project* at para. 85 (see above note [118]), where the Court refers to the *River Oder* case and suggests that the principle applied in that case applied also to non-navigational uses.

[172] These countries include South Africa, Namibia, Libya, Tunisia, Guinea-Bissau, Nigeria, Burkina Faso, Morocco, Benin, and Chad.

[173] See, as one example, the report that examines institutional bodies in seven major African basins: Nile River, Lake Chad, Niger River, Senegal River, Okavango, Orange River system and Zambezi River, and their institutional linkages in the context of integrated river basin management (IRBM); GTZ report, "A Comparative Study Of The Linkages Between River/Lake Basin Organizations And The Respective Cooperating National Governments In Seven Major

African Basins" (2008), "The institutions are central to the management of water resources and are crucial to the implementation of the principles of international law, particularly the principle of equitable use of transboundary water resources and the obligation not to cause harm in the management of transboundary water resources."

[174] http://www.gwp.org/en/WACDEP/

[175] Ibid.

[176] The Nile Council of Ministers (NILE-COM) meeting held in Kigali, Rwanda on 5 July 2012, commended Global Water Partnership Eastern Africa (GWPEA) on its transboundary water projects implemented in the framework of WACDEP; http://www.gwp.org/en/WACDEP/NEWS-AND-EVENTS/News-Archive/Nile-Council-of-Ministers-Commended-GWPEA-Progress/.

[177] See GWP. http://www.gwp.org/gwp-in-action/News-and-Activities/Enabling-Delta-Life---New-Initiative-for-Water-Management/

[178] See Tanzi, A. 2000. The Relationship between the 1992 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes and the 1997 UN Convention on the Law of the Non Navigational Uses of International Watercourses (Report of the UNECE Task Force on Legal and Administrative Aspects); See also the report of the recent UNECE Water Convention Meeting of the Parties (Rome, 28-30 November 2012) available at http://www.unece.org/index.php?id=31635. The GWP input to this meeting is found at http://www.gwp.org/Global/Activities/News/Dec%202012/Intervention%20from%20Global%20Water%20Partnership%20to%20the%20UNECE%20Meeting%20of%20the%20Parties%20Rome%20Nov%202012.pdf.

[179] Chen, H., Rieu-Clarke, A. and Wouters, P. (2012) 'Exploring the legal regimes that govern China's international watercourses – A survey of current practice analysed through the prism of the 1997 UN Watercourses Convention' Journal of Water Law (forthcoming),

[180] http://www.solutionsforwater.org/objectifs/1-5-2-agreements-related-to-transboundary-surface-andor-groundwater.

[181] P. Wouters," Addressing Water Security Challenges – The International Law 'Duty to Cooperate' as a Limit on Absolute State Sovereignty", in Terje Tvedt, Owen McIntyre, Tadesse Kassa Woldetsadik (eds) Sovereignty and the Development of International Water Law (2013, forthcoming).

[182] Fox and Sneddon, argue, "As the case studies of downstream wetlands (the Mekong and Zambezi deltas) demonstrate, equitable utilization does little to prevent upstream development (such as dams and water diversions), which are causing significant harm to peoples and ecosystems." (see above note [71], pp. 247-48). "Current models of transboundary river basin cooperation in the Mekong and Zambezi basins do little to advance sustainable ecosystem governance. Instead, the Mekong Agreement and the Zambezi Protocol enable a deeply problematic securitization of the environment. The projects and policies that underpin this securitization are directly responsible for declining human and ecological security in both basins. … We suggest that in both the Mekong and Zambezi basins, ecologically and socially meaningful cooperation among state and non-state actors would challenge sovereignty more fully. … Regardless of how agreements evolve in any given river basin, they will require the recognition and creation of new political spaces." (p.256; 257).

[183] State practice under the UNECE Water Convention demonstrates how cooperation can be facilitated in practice across diverse regions. See the recent UNECE Second Assessment of Transboundary Rivers, Lakes and Groundwaters, which states, "Legal, institutional and socio-economic issues have a prominent place in the Second Assessment, given their crucial importance for transboundary water cooperation." http://www.unece.org/fileadmin/DAM/env/water/publications/assessment/English/ECE_Second_Assessment_En.pdf

[184] Leb, C. and P. Wouters. 2012. The Water Security Paradox and International Law: Securitisation as an Obstacle to Achieving Water Security and the Role of Law in De-Securitising the World's Most Precious Resource. in B.A. Lankford, K. Bakker, M. Zeitoun and D Conway (eds) 'Water security: Principles, perspectives and practices'. Earthscan Publications, London (forthcoming)

[185] Aristotle, Politics, Book II, ch. 3, cited in E. Ostrom, Governing the Commons, CUP, 1990, p. 2.

[186] "Duty to Cooperate for Water Security", http://www.gwp.org/gwp-in-action/News-and-Activities/Duty-to-Cooperate-for-Water-Security/.

[187] World Economic Forum Annual Meeting, 25-29 January 2012. http://www.weforum.org/events/world-economic-forum-annual-meeting-2012; and for the programme: http://www3.weforum.org/docs/AM12/WEF_AM12_ProgrammeWeb.pdf). Water is one of the issues that the WEF focuses on within environmental sustainability. http://www.weforum.org/issues/water. In 2011, it published a report entitled " Water Security – The Water-Food-Energy-Climate Nexus". http://www3.weforum.org/docs/WEF_WI_WaterSecurity_WaterFoodEnergyClimateNexus_2011.pdf.

[188] The forum was held 12 to 17 March 2012. http://www.worldwaterforum6.org/en/.

[189] Rio+20, the United Nations Conference on Sustainable Development was convened 20 to 22 June 2012. http://www.uncsd2012.org/rio20/ It included 'water' as one of seven critical issues http://www.un.org/en/sustainablefuture/water.shtml. The UN Resolution "The future we want" endorsed the outcome of the Rio meeting, but has been criticised for the absence of reference to transboundary water resources. See note 1 above.

[190] On 30 November 2012, the Meeting of the Parties (MoP) to the United Nations Economic Commission for Europe (UNECE) Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) adopted several decisions and a new programme of work that mark a crucial turning point in the globalization of the Convention.; available at http://www.unece.org/index.php?id=31635.

[191] The Bonn 2001 Nexus Conference on "The Water Energy and Food Security Nexus – Solutions for the Green Economy" was held in Bonn, Germany, from 16 to 18 November 2011. The conference represents part of Germany's contribution to the United Nations Conference on Sustainable Development, scheduled for 2012 in Rio de Janeiro. http://www.water-energy-food.org/en/conference.html

[192] Bonn 2011 Nexus Conference, Draft Policy Recommendations, Chapter 4: Taking action: scope, roles and responsibilities. http://www.water-energy-food.org/en/conference/policy_recommendations/ch4.html

[193] Some of the key messages included, "Water, food and energy are key strategic resources for the individual riparian countries that adopt policies and make decisions at the national level. This may on the one hand create barriers to cooperation, but on the other hand a nexus approach can contribute to regional stability if countries can agree to cooperate", and, "In addressing the nexus it is recognized that water management needs to respect the basin and aquifer as the basic unit, from the smallest catchment to the major transboundary basins. Hence the opportunities and trade-offs of the nexus need to be addressed at the basin level, and transboundary river basin and aquifer management entities should be empowered to play their role in influencing national decisions." See Mekong2Rio: International Conference on Transboundary River Basin Management 1-3 May 2012, Phuket, Thailand.

[194] Para (119). See note 1 above.

[195] OECD, 2012, Meeting The Water Reform Challenge. http://www.oecd.org/env/biodiversitywaterandnaturalresourcemanagement/meetingthewaterreformchallenge.htm

[196] The notion of the triangle of governance in the context of global governance was raised in "Global governance requires localising global issues," speech by Director-General Pascal Lamy at the Oxford Martin School, Oxford University on 8 March 2012; "On one side of the triangle lies today the G20, replacing the former G8 and providing political leadership, policy direction and coherence. The second side of the triangle is the United Nations, which provides a framework for global legitimacy through accountability. On the third side lie member-driven international organizations providing expertise and specialized inputs be they rules, policies or programmes. This "triangle" of global governance is emerging. Bridges linking the G20 to international organizations and to the UN system have started to be built." http://www.wto.org/english/news_e/sppl_e/sppl220_e.htm

[197] Director-General Pascal Lamy, in a speech at the Singapore Global Dialogue at the Rajaratnam School of International Studies on 21 September 2012, said that "shared values, multilateralism, subsidiarity, coherence, enforceability, legitimacy: our task in the years to come is to re-invent a system of global governance founded on these elements." http://www.wto.org/english/news_e/sppl_e/sppl248_e.htm

[198] E.Brown-Weiss, Transnational Environmental Law, 1:1 (2012), pp. 153–168, p. 154. Brown-Weiss asserts, "If we were to recognize the availability and use of water resources as being a common concern of humankind, it would provide a normative basis for all members of the international community to address the multitude of water-related problems. Members include not only states, but international organizations, non-governmental organizations, private sector networks, commercial actors, and individuals. Scarcity of fresh water resources offers both a path to conflict and an opportunity for cooperation." See also E. Benvenisti, "Sovereigns as Trustees of Humanity: The Concept and its Normative Implications", where he begins, "We live in a shrinking world where interdependence between countries and communities is increasing. These changes also affect – as they should – the concept of sovereignty." http://www.wzb.eu/sites/default/files/u32/eyal_benvenisti_sovereigns_as_trustees_of_humanity_july_3rd_2012.pdf

[199] D. Tarlock and P. Wouters, "The Third Wave Of Normativity In International Water Law – Emerging Obligations *Erga Omnes* Requiring the Cooperative Management of the World's Shared Water Resources" (work-in-progress on file with the author).

[200] The annual GWP training event on transboundary water law contributes to this mission; "GWP Partners Trained at Annual Transboundary Workshop". http://www.gwp.org/gwp-in-action/News-and-Activities/GWP-Partners-Trained-at-Annual-Transboundary-Workshop/.

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