

'Dynamic cooperation' in international law and the shadow of state sovereignty in the context of transboundary waters (Part 2)

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Part 1 of this article can be read in the previous issue (3) of *Environmental Liability* 21 [2013] at 88-97 and online at www.lawtext.com.

The duty to cooperate, the bedrock of international law, continues to evolve as new global challenges emerge that test the boundaries of state sovereignty. This work explores the duty to cooperate through the prism

of transboundary waters in the context of impending conflicts-of-use as demands increase to meet growing economic, social, cultural and environmental needs. What are the obligations on sovereign nation states as they develop and manage their shared water resources? This article argues that a norm of 'dynamic cooperation' is emerging in the field, with its origins at the very core of international law, and which provides a platform for the continued peaceful management of the world's shared fresh waters. With 2013 declared as the UN International Year of Water Cooperation it is hoped that this provides the impetus to explore more fully the 'duty to cooperate' as it relates to the development and management of the world's shared freshwater resources. (From the opening of part 1)

The rules of international law that govern the uses of shared fresh waters comprise a broad range of norms articulated in treaties and custom. Given the vast reach of the resource, the spectrum of rules in this area is expansive and expanding – from water and sector-related norms, to relevant regulatory instruments in trade (ie virtual water), human rights and in areas related to the environment and sustainable development.¹ This article will focus primarily on the rules that govern the allocation of the uses of the water resources of international waters, primarily through treaty and state practice.

III. The duty to cooperate in international water resources management – treaty and state practice

III.1 Global and regional instruments as frameworks for cooperation

There is extensive treaty practice covering transboundary waters; however, two thirds of the world's 263 international river basins, plus transboundary aquifer systems, lack any

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¹ E Brown Weiss (2007) 'The Evolution of International Water Law' in *Recueil de Cours*, Hague Academy of International Law 2007 vol 331 pp 163–404; On the history of water in environmental instruments see J L Wescoat 'Main Currents in Early Multilateral Water Treaties: A Historical-Geographic Perspective, 1648–1948' (1996) 7 *Colo. J. Int'l Envtl. L. & Pol'y* 39.

type of cooperative management framework.² At the global level, two important UN conventions provide overarching frameworks for the development and management of international waters. The United Nations Convention on the Law of the Non-navigational Uses of International Watercourses (UNWC)³ and the UN Economic Commission for Europe Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE TWC),⁴ offer complementary instruments, each aimed at providing guidance to watercourse states in the management of their shared freshwater resources.⁵ The UNWC focuses, broadly, on use-allocation, while the UNECE TWC is concerned primarily with limiting transboundary impact and pollution control.⁶ The UN continues its work on shared aquifers, which remains under consideration.⁷

2 UN Water Thematic Paper 'Transboundary Waters: Sharing benefits, Sharing responsibilities' (2008) http://www.unwater.org/downloads/UNW_TRANSBOUNDARY.pdf. The Report sets the context: 'Approximately 40 per cent of the world's population lives in river and lake basins that comprise two or more countries, and perhaps even more significantly, over 90 per cent lives in countries that share basins. The existing 263 transboundary lake and river basins cover nearly one half of the Earth's land surface and account for an estimated 60 per cent of global freshwater flow. A total of 145 States include territory within such basins, and 30 countries lie entirely within them. In addition, about 2 billion people worldwide depend on groundwater, which includes approximately 300 transboundary aquifer systems.'

3 UN Convention on the Law of the Non-navigational Uses of International Watercourses 1997 (UNGA Res 51/206, 51 UNGAOR Supp No 49 at 341, UN Doc A/51/49 (vol I) (1996)) Adopted 21 May 1997, not yet in force http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf.

4 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes 1992 Helsinki 31 ILM 1312, entered into force 6 October 1996 <http://www.unece.org/env/water/pdf/watercon.pdf>.

5 A Tanzi '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 (2000) on file with author; see also A Rieu-Clarke 'The Role and Relevance of the UN Convention on the Law of the Non-navigational Uses of International Watercourses to the EU and its Member States' 78 *British Yearbook of International Law* (2008) 389.

6 P Wouters 'What Lessons From Europe? A comparative analysis of the legal frameworks that govern Europe's transboundary waters' (2006) 36 *ELR* 10290. See also Tanzi (ibid).

7 UN Resolution 66/104 (9 December 2011) 'The law of transboundary aquifers' under which the UNGA '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'.

The UNWC arose out of concerns raised by Member States in the UN General Assembly (GA) related to conflicts over the use of shared transboundary waters; as a result the UN asked the International Law Commission (ILC) to undertake a study of the topic. Following close to 30 years of work, the draft articles concluded by the ILC in 1994 were revised and adopted by the UNGA in 1997 in the form of the UN Watercourses on the Non-navigational uses of International Watercourses (UNWC).⁸ Containing 37 Articles with a 14-Article Annex, the instrument was adopted by a vote of 104 states in favour, 3 against (Turkey, China and Burundi) and 26 abstentions. The text was opened for signature on that date until 20 May 2000 and approaches eventual entry into force, with only five more states needed to endorse the convention.⁹

The overarching rules of the UNWC include the governing principle of equitable and reasonable utilization 'consistent with adequate protection of the watercourse' (Article 5)¹⁰ and the duty to 'protect and preserve the ecosystems of international watercourses' (Article 20). The substantive rules are supported by a suite of procedural rules (Part III), connected by the duty to cooperate (Article 8). The legal test for any new or altered use of the shared waters of an international watercourse involves the identification of 'all relevant factors', which are to be 'considered together and a determination as to what qualifies as an equitable and reasonable use is based upon the whole'.¹¹

8 Note 3.

9 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. 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. See <http://www.gcint.org/news/green-cross-commends-chad%E2%80%99s-ratification-un-watercourses-convention>.

10 This finds concrete expression in the rule of equitable and reasonable use, as codified in art 5(1) 'Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilization thereof and benefits therefrom, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse'. ... and from art 6(3) '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'.

11 UNWC art 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:

The duty to cooperate in the UNWC is elaborated as follows, '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'.¹² In explaining the meaning of this provision, the Commentary to the 1994 draft provides: 'Cooperation between watercourse States with regard to their utilization of an international watercourse is an important basis for the attainment and maintenance of an equitable allocation of the uses and benefits of the watercourse and for the smooth functioning of the procedural rules contained in part three of the UNWC'.¹³ While this provision, on the face of it, focuses on cooperation, upon closer scrutiny there remains the inherent tension between optimal use of the shared water resources and adequate protection of ecosystems – which interests would prevail and how would these be reconciled in the event of a conflict of uses?

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- (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.' See also O McIntyre, *Environmental protection of international watercourses under international law* (Ashgate Publishing Kent 2007).

12 UNWC art 8: General obligation to cooperate:

1. Watercourse States shall cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilization and adequate protection of an international watercourse.
2. In determining the manner of such cooperation, watercourse States may consider the establishment of joint mechanisms or commissions, as deemed necessary by them, to facilitate cooperation on relevant measures and procedures in the light of experience gained through cooperation in existing joint mechanisms and commissions in various regions.

13 Commentary to the Draft Articles on the Law of the Non-navigational Uses of International Watercourses, adopted on second reading in 'Report of the International Law Commission on the work of its forty-sixth session' (1994) 2(2) *Year Book International Law Commission* p 105. http://untreaty.un.org/ilc/documentation/english/a_cn4_l493.pdf.

The operational aspects of cooperation are sprinkled throughout the Convention – Article 3 (the process to be followed in concluding watercourse agreements, stressing the need to consult and include all riparian states that may be affected);¹⁴ Article 5(2), which introduces the obligation to 'participate in the use, development and protection of an international watercourse in an equitable and reasonable manner', which 'includes both the right to utilize the watercourse *and the duty to cooperate* in the protection and development thereof'; the provisions on 'Planned Measures' contained in Part III (Articles 9, 11–17); Article 14 (provision of data and information); Article 25 (regulation of flow); and Article 31 (good faith provision of information). While most of these provisions in Part III are process-oriented, they are anchored on the governing rule of 'equitable and reasonable use', which includes an obligation of 'adequate protection' of the watercourse.

Read together, the UNWC provides an operational framework for the duty to cooperate in the use of international watercourses based upon the substantive and procedural provisions of the instrument, and its requirement for consultations and recommendation for joint institutional mechanisms. Watercourse states have a duty and a right to cooperate on all aspects – from use-allocation, protection of the watercourse, ecosystem preservation, flood protection and pollution abatement. Thus, the cornerstone operational principle at the heart of the UNWC, and arguably across the domain of international water law, is the *duty to cooperate* (in substance and in procedure). How this influences state practice in actual terms, ie where watercourse states do not have a shared and common commitment to protect and preserve environmental interests (ecosystems, wetlands, fishing, etc), will need to be evaluated on a case by case basis.

The UNECE TWC, with its focus on limiting transboundary impact, might provide clearer guidance on how the duty to cooperate operates to protect the environment within the watercourses context. This instrument has been endorsed by close to 40 states and the European Commission and now is open for universal

14 The ILC Commentary provides 'Otherwise, a few States of a multi-State international watercourse could appropriate a disproportionate amount of its benefits for themselves or unduly prejudice the use of its waters by watercourse States not parties to the agreement in question. Such results would run counter to fundamental principles which will be shown to govern the non-navigational uses of international watercourses, such as the right of all watercourse States to use an international watercourse in an equitable and reasonable manner and the obligation not to use a watercourse in such a way as to injure other watercourse States' pp 94–97.

adoption (from February 2013).¹⁵ Under Article 2 'The Parties shall take all appropriate measures to prevent, control and reduce any transboundary impact'. This duty is supplemented by a series of more specific obligations, including a requirement that riparian parties

shall cooperate on the basis of equality and reciprocity, in particular through bilateral and multilateral agreements, in order to develop harmonized policies, programmes and strategies covering the relevant catchment areas, or parts thereof, aimed at the prevention, control and reduction of transboundary impact and aimed at the protection of the environment of transboundary waters or the environment influenced by such waters, including the marine environment' (Article 2(6))

The duty to cooperate appears throughout the instrument, especially in the context of riparian parties (as compared with parties) who are held to a higher level of joint undertakings and engagement.¹⁶ The Meeting of the Parties (MoP) as the primary institutional body created under the UNECE TWC has played, and continues to play, an integral role in the effective implementation of the agreement, validating the universal view that joint institutions can be essential vehicles for transboundary water cooperation.¹⁷ The UNECE TWC practice, guided by the duties and obligations agreed to under the treaty, includes a broad range of stakeholders and local, regional and international experts in its work, and now includes a newly appointed nine-person 'Implementation Committee' which

'will render practical case-tailored assistance to prevent water-related disputes and support Parties in their efforts to implement the Convention'.¹⁸ Such an innovative approach, which enhances significantly the work of the many joint bodies working under the UNECE TWC umbrella, is another significant contribution to cooperation under the convention.¹⁹

Europe is also covered by the EU Water Framework Directive (EU WFD),²⁰ with its primary substantive rule requiring Member States to implement the necessary measures to achieve 'good water status' in all EU waters by 2015 (Article 4). Member States are obliged to report regularly on the status of their waters (measured subject to specific criteria in the Directive) under River Basin Management Plans, which categorise waters across Europe (Article 13). Member States must identify designated authorities responsible for implementing the Directive at national levels and report on these in accordance with the requirements under the Directive.²¹

The regional instrument covering Southern African transboundary waters, concluded in 2000 and inspired by the UNWC, is the Revised Protocol on Shared Watercourses (RPWS), which replaces its predecessor.²²

15 Soon to celebrate its 20th anniversary, the UNECE TWC has 39 states parties including the European Union. The parties are increasingly aware 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.icpdr.org/main/20-years-unece-water-convention>.

16 UNECE TWC (art 5) 'The Parties shall cooperate in the conduct of research into and development of effective techniques for the prevention, control and reduction of transboundary impact'. Article 9(1) 'Riparian Parties shall on the basis of equality and reciprocity enter into bilateral or multilateral agreements or other arrangements, where these do not yet exist, or adapt existing ones, where necessary to eliminate the contradictions with the basic principles of this Convention, in order to define their mutual relations and conduct regarding the prevention, control and reduction of transboundary impact'. Article 9(4) 'Joint bodies according to this Convention shall invite joint bodies, established by coastal States for the protection of the marine environment directly affected by transboundary impact, to cooperate in order to harmonize their work and to prevent, control and reduce the transboundary impact'.

17 'Without relations or institutions conducive to conflict resolution, unilateral action can heighten tensions and regional instability, requiring years or decades to resolve: the Indus Waters Treaty took 10 years of negotiations, the Indo-Bangladesh Ganges Water Treaty (1996) 30 years and the Israel-Jordan Treaty of Peace (1994) 40 years'. A Kramer, A T Wolf, A Carius and G D Dabelko 'The key to managing conflict and cooperation over water' in *UNESCO, A World of Science* vol 11 no 1 (January–March 2013) p 7.

18 The decision on the establishment of the Implementation Committee refers to it as being created 'with the aim to facilitate, promote and safeguard the implementation and application of and compliance with the Convention'; see 'Draft Decision on support to implementation and compliance, adopted at the sixth session of the MoP to the UNECE TWC on 28–30 November 2012 in Rome. Highlights of meeting outcomes <http://www.unece.org/env/water/mop6.html>, and draft decisions http://www.unece.org/fileadmin/DAM/env/water/mop_6_Rome/Official_documents/ECE_MP.WAT_2012_L.4_e.pdf.

19 At the UNECE TWC MoP in Rome 2013, the parties agreed the 2013–15 Work Plan which is aimed at strengthening cooperation under the Convention; see highlights of meeting outcomes <http://www.unece.org/env/water/mop6.html>.

20 Directive 2000/60/EC Establishing a Framework for Community Action in the Field of Water Policy (2000) OJ L 327.

21 The UK government website states 'The WFD establishes a strategic framework for managing the water environment. It requires a management plan for each river basin to be developed every six years. The plans are based on a detailed analysis of the impacts of human activity on the water environment and incorporate a programme of measures to improve water bodies where required'. <http://www.defra.gov.uk/environment/quality/water/legislation/water-framework-directive/>. In Scotland the current update from SEPA states: 'The first river basin management plans for Scotland have been approved, adopted and published. We are now in the process of developing the second river basin management plan which will be completed in 2015'. http://www.sepa.org.uk/water/river_basin_planning.aspx.

22 The Southern African Development Community (SADC) has 15 Member States namely: Angola, Botswana, Democratic Republic of Congo (DRC), Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, United Republic of Tanzania, Zambia and Zimbabwe. The parties initially concluded the Protocol on Shared Watercourse Systems in the SADC Region, now repealed under the Revised Protocol entered into force 22 September 2003 (2001)40 *ILM* 317 <http://www.sadc.int/index/browse/page/159>.

The RPWS provides the foundation for regional water development plans, recently agreed for its third phase.²³ Under Article 2, the Protocol provides that 'The overall objective of this Protocol is to foster closer cooperation for judicious, sustainable and co-ordinated management, protection and utilisation of shared watercourses and advance the SADC agenda of regional integration and poverty alleviation'. The substantive rules follow those set forth, in large part, in the UNWC, with some additions; for example, the provision on equitable and reasonable use mirrors Article 5(1) of the UNWC, but adds that the use shall be for 'for the benefit of current and future generations' (Article 7(a)), thus adding an inter-generational dimension. The duty to cooperate finds expression throughout the instrument (Article 3(5)): 'State Parties undertake to pursue and establish close co-operation with regard to the study and execution of all projects likely to have an effect on the regime of the shared watercourse' supported by the institutional bodies created under Article 5. The Water Sector Co-ordinating Unit is responsible for monitoring implementation of the agreement and plays an important role in the oversight of the transboundary watercourses spread across the region, many of which have agreements and institutional bodies in place. Despite the great variety of transboundary watercourses shared across Southern Africa, the impact of the Revised Protocol and activities in accordance with it has led to the following observation: 'Water has played a unifying role in the SADC region, leading to regional cooperation'.²⁴

This summary review of the key global and regional instruments governing transboundary watercourses has revealed an approach founded upon cooperation operationalised through three pillars integral to the legal regimes in this area: (i) substantive rules (ii) procedural rules (iii) institutional mechanisms. The next part examines selected case studies, focussing on treaty and state practice connected with upstream states, with a view to exploring the existence (or absence) of cooperation in those cases, considered through the legal lens.

III.I.1 Selected survey of state practice with a focus on upstream states

The duty to cooperate finds its greatest challenge in this field in the case of upstream states – what incentive do China, Brazil, India and Turkey (as just some examples) have to cooperate in the uses of their shared transboundary water resources? Some upstream states have challenged the UNWC as being unbalanced vis-à-vis their position, but there was overwhelming support for the convention – including from a significant number of upstream states. Some upstream states have positioned themselves as exemplar upstream nations: Switzerland has maintained a 'good upstream neighbour policy' within Europe and also mounted a new type of international cooperation which combines peace promotion and the sustainable management of water resources in the Middle East, an approach reiterated by the Swiss government at the recent UN Ministerial Round-Table on Water Security;²⁵ in 2011, Scotland declared itself the world's first Hydro Nation and has now taken action to implement this initiative.²⁶ The 20-years practice under the UNECE TWC, enhanced by decisions taken at its latest Meeting of the Parties (reviewed above), demonstrate how cooperation can be achieved in the peaceful development and management of transboundary water resources across vast and diverse regions (including many upstream-downstream watercourses) facing complex and changing challenges.

China and the Mekong

China borders some 14 states (North Korea, Russia, Mongolia, Kazakhstan, Kyrgyzstan, Tajikistan, Bhutan, Myanmar, Laos, Nepal, Pakistan, Afghanistan, India and Vietnam) and international watercourses and their basins are shared with some 19 countries across that region.²⁷ Most of these shared waters are not covered by treaties;²⁸

23 See Implementation of Regional Strategic Action Plan on Integrated Water Resources Management and Development: 'The SADC Water Division is currently coordinating implementation of the third phase of the Regional Strategic Action Plan on Integrated Water Resources Management and Development (RSAP) 2011–15. The RSAP is the framework for action to achieve the sustainable development of water resources in the region through the development of water infrastructures on the basis of sound water governance and water management. The RSAP III serves as a work plan to guide the development and implementation of activities in the SADC water sector for the periods 2011–2015'. http://www.sadc.int/files/9913/3050/6323/RSAP_III_News.pdf.

24 SADC website <http://www.kunenerak.org/governance/sadc/sadc+water+protocol.aspx>.

25 Speech by Federal Councillor Didier Burkhalter, Head of the Federal Department of Foreign Affairs, Water, Peace and Security Ministerial Roundtable 'Blue diplomacy – a high priority for Switzerland' New York (25 September 2012) http://www.eda.admin.ch/etc/medialib/downloads/edazen/topics/intorg/un/redeundivers.Par.0021.File.tmp/Water%20and%20Security%20Speech_CFDB_EN_25092012.pdf. See also Water as a source of Peace, http://www.deza.admin.ch/en/Home/Projects/Selected_projects/Water_management_and_peace_promotion_in_the_Middle_East.

26 'Making Scotland a Hydro Nation' <http://www.scotland.gov.uk/News/Releases/2012/06/scotland-water28062012>. The Water Resources (Scotland) Bill, see <http://www.scottish.parliament.uk/parliamentarybusiness/Bills/52620.aspx>.

27 See H Chen, A Rieu-Clarke and P Wouters 'The 97 UNWC and China's Treaty Practice on Transboundary Waters' in International Water Policy (forthcoming *IWA* 2013).

28 China's main water treaties are/have been with Russia, Mongolia, North Korea and Kazakhstan, see list at www.chinainternationalwaterlaw.org; see also study by S le Clue 'Water Treaties – A Question of Rights' (April 2012) where 27 treaties across Asia are reviewed at <http://chinawaterrisk.org/resources/analysis-reviews/water-treaties-a-question-of-rights/>.

increased economic development across China has resulted in increased demands on these resources and diminishing water supplies (quantity and quality) could be a constraint on development.²⁹ The major transboundary water issues for China and its neighbours relate to allocation and re-allocation of uses, and the limiting of transboundary adverse impacts, such as pollution and severe floods and droughts. Hydro-electric potential is also a central concern across the region, as is the management of quickly disappearing aquifers and adversely affected ecosystems, caused by a number of factors, including glacier melts³⁰ due to climate change. Transboundary waters account for 26.8 per cent of the country's total annual discharge and are concentrated in three regions: the northeast, the northwest, and the southwest.³¹ China is upstream on most of its transboundary waters,³² including the Lancang-Mekong,³³ the Yarlung Zangbo-Brahmaputra³⁴ and the Irtysh-Ob, selected

for consideration in this short study.

China's damming, pollution and canalisation of the upper reaches of the Mekong River pose problems for the downstream riparians in terms of both quantity and quality. Of particular concern to downstream countries is the current boom in dam-building for hydropower, especially the development of the Nu Cascade. China's current and immediate future relationship with India is heating up, and there is increasing potential for conflict over shared international waters, including the Brahmaputra, on which millions depend, which rises in Tibet (discussed in more detail below). China has recently announced plans to build a dam on the Brahmaputra-Yarlung Tsangpo.³⁵ This has resulted in India formally lodging a complaint against China's dam-building projects, requesting that China consider the adverse impacts on its downstream neighbour.³⁶ China has responded stating that 'China has always taken a responsible attitude towards cross-border development' and one official stated that 'the construction of the stations will not impact flood control or disaster-reduction efforts, as well as the ecological environment on the lower reaches'.³⁷

On the north-western front, potential tensions could arise between China and Kazakhstan and possibly Russia, as China plans to extract water from the Ili and Irtysh Rivers for Urumchi and for oil-field development in the Xinjiang Autonomous Uyghur Region. This will have adverse environmental impacts on freshwater inflow to Eastern and Central Kazakhstan, effectively drying up the Irtysh-Karaganda canal and lowering the water level in the Irtysh which serves the Russian city of Omsk.³⁸ The manner in which China pursues this goal will have a tangible impact upon future water security and sustainability for the surrounding riparian nations; already China is moving forward with its five-year energy development plan, which will affect transboundary water resources. As China and Kazakhstan work toward agreement over the joint use of more than 20 shared transboundary rivers, including the Irtysh and the Ili, it must be recognised that these basins are current hotspots and hold

29 See recent reports, including Z Knight, N Robins and Wai-Shin Chan 'Water stress – analysing the global challenges' *HSBC Reports* (2012); and Wai-Shin Chan, N Robins and Z Knight 'No water, no power – is there enough water to fuel China's power expansion?' *HSBC Research Reports* (2012). Both reports highlight China's growing water problems, noting that 11 of China's provinces are water scarce and close to half the country's coal reserves (very water intensive) are located in water scarce regions. Energy is water intensive and possible sources for increased hydropower include transboundary watercourses such as the Mekong and the Salween. See also D Tan 'Water: shaping China's food and energy choices' <http://chinawaterrisk.org/opinions/water-shaping-chinas-food-energy-choices/>. See also McKinsey 'Charting our Water Future' Executive summary (2009) p 16 which forecasts 'China's demand in 2030 is expected to reach 818 billion m³, of which just over 50 per cent is from agriculture (of which almost half is for rice), 32 percent is industrial demand driven by thermal power generation, and the remaining is domestic. Current supply amounts to just over 618 billion m³. Significant industrial and domestic wastewater pollution makes the "quality adjusted" supply-demand gap even larger than the quantity-only gap: 21 per cent of available surface water resources nationally are unfit even for agriculture. Thermal power generation is by far the largest industrial water user, despite the high penetration of water-efficient technology, and is facing increasing limitations in the rapidly urbanizing basins'. http://www.mckinsey.com/client_service/sustainability/latest_thinking/charting_our_water_future.

30 World Wildlife Fund, 'Glaciers In China And Tibet Fading Fast' (2009), <http://www.sciencedaily.com/releases/2009/02/090220185537>.

31 UNEP 'Hydropolitical Vulnerability and Resilience along International Waters' <http://www.unep.org/dewa/assessments/Ecosystems/water/Asia.pdf>, 24 August 2010. See also S Marsden 'Developing approaches to trans-boundary environmental impact assessment in China: co-operation through the Greater Tumen Initiative and in the Pearl River Delta Region' *Chinese Journal of International Law* (2010) 9(2) 393–414.

32 J E Nickum 'The upstream superpower: China's international rivers' in O Varis, A K Biswas and C Tortajada (eds) *Water Resources Development and Management* (Management of Transboundary Rivers and Lakes: IX–XIII Springer, Berlin 2008).

33 Chinese Ministry of Culture 'Lancang River' http://www.chinaculture.org/gb/en_travel/2003-09/24/content_34164.

34 Chinese Ministry of Culture 'Yarlung Zangbo River' http://www.chinaculture.org/gb/en_travel/2003-09/24/content_34084.

35 J Watts 'Chinese engineers propose world's biggest hydro-electric project in Tibet' *The Guardian* (24 May 2010) <http://www.guardian.co.uk/environment/2010/may/24/chinese-hydroengineers-propose-tibet-dam>.

36 S Gangadharan 'India lodges complaint with China against construction of three dams on Brahmaputra' *IBN Live* 31 Jan 2013 <http://ibnlive.in.com/news/india-lodges-complaint-with-china-against-construction-of-three-dams-on-brahmaputra/370063-3>.

37 R Ronamai 'Why is India helpless on China's ambitious plans on Brahmaputra River?' *International Business Times India* (5 February 2013) <http://www.ibtimes.co.in/articles/431567/20130205/india-helpless-china-hydropower-dams-brahmaputra-river>.

38 S Blank 'China's water policies in Central Asia and leadership potential' *Central Asian Caucasus Institute Analyst* (26 November 2009) <http://www.cacianalyst.org/?q=node/5223> 13 October 2011.

the potential for future tensions.³⁹

On the other hand, there appears to be some evidence of increasing cooperation through treaty and state practice regarding China's shared international water resources. China has concluded some 12 border treaties with its neighbours, making provision for transboundary water use in a series of border rivers (contiguous watercourses). Further, there is a growing body of water-related treaties, the most recent of which align with the key principles espoused under the UNWC and include various provisions on cooperation.⁴⁰ This includes the creation of joint institutional bodies, such as the Joint Committee on the Halaha/Bor Nor Lake (shared by China and Mongolia), and Joint Committees in bilateral agreements with Kazakhstan and Russia,⁴¹ China's participation as an observer under the Mekong Agreement⁴² and the conclusion of agreements on data-sharing actions that enhance China's cooperation in the area.⁴³

India and the Ganges-Brahmaputra and Indus

India, among the fastest growing countries in the South Asian region (possibly in the world) has posted a yearly growth rate of 8.6 per cent.⁴⁴ With a population of 1.4

billion, India is home to nearly half of the world's poor.⁴⁵ Increasing economic growth rates and urbanisation have fuelled the need for energy, especially hydropower, putting water at the very heart of the region's development process and heightening the critical importance of the resource to the economic welfare of the region. Recent reports have identified India as already suffering from water stress⁴⁶ and one of the key constraints on development in that country is linked to water.⁴⁷

Three of the largest transboundary watercourses in South Asia cross India, including the Ganges-Brahmaputra-Meghna (Bangladesh, Bhutan, China, India and Nepal), the Indus (Afghanistan, China, India, Nepal and Pakistan),⁴⁸ and the Kosi, Mahakali and Gandaki Rivers (India, Nepal).⁴⁹ The Ganges-Brahmaputra-Meghna (GBM) river system is one of the largest freshwater flow regimes in the world. Two great east Himalayan rivers, the Ganges and the Brahmaputra, are joined by the Meghna, which originates in one of the most rain-prone areas of the world and drains through Bangladesh to the ocean, providing water for almost one-tenth of the global population.⁵⁰ India, adopting its traditional bilateral approach to the management of its international watercourses has concluded a number of treaties,⁵¹ including the 1960 Indus Waters Treaty (with

39 Leadership Group on Water Security in Asia 'Asia's next challenge: securing the region's water Future' (New York Asia Society 2009) 16.

40 For more details see C Huiping, Rieu-Clarke and Wouters (n 27). Examples of treaties that refer to cooperation include, *inter alia*, the Agreement on Protection and Utilization of Transboundary Waters between PRC and Mongolia (1994); Treaty between China and Mongolia on the Management of the Boundary (2010) (Chapter 4 Utilization and Protection of Boundary Waters) (Arts 2, 3 and 5); Agreement between the Government of the Republic of Kazakhstan and the Government of the People's Republic of China Concerning Cooperation in Use and Protection of Transboundary Rivers (2001), and the Agreement between the Government of the People's Republic of China and the Government of the Russian Federation Concerning Reasonable Use and Protection of Transboundary Waters (2008).

41 Agreement between the Government of the People's Republic of China and the Government of Mongolia on the protection and utilization of transboundary waters 1994 <http://ocid.nacse.org/tfdd/tfddocs/528ENG.pdf>.

42 Mekong River Commission 'Agreement on provision of hydrological information renewed by China and MRC' (2008) http://www.mrcmekong.org/MRC_news/press08/MRC-China-agreement.htm.

43 UN Economic and Social Commission for Asia and the Pacific (ESCAP) 'Guidelines for the Harmonization of Navigation Rules and Regulations' UN Aids to Navigation vol 1 (2001). http://www.unescap.org/ttdw/Publications/TFS_pubs/navigation_full_text_2186.pdf.

44 'East and South Asia leading recovery of world economy from recession' (15 January 2010) <http://www.unescap.org/unis/press/2010/jan/n02.asp>; See also Asian Development Bank, 'Developing Asia's Recovery Gains Momentum' <http://www.adb.org/documents/books/ado/2010/ado-special-note-2010.pdf>; World Bank, 'Overview: Understanding, measuring and overcoming poverty' (13 October 2011) <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTPA/0,,contentMDK:20153855~menuPK:435040~pagePK:148956~piPK:216618~theSitePK:430367,00>.

45 *ibid.*

46 'Water stress: analysing the global challenges' HSBC Report (Sept 2012) <https://www.research.hsbc.com/midas/Res/RDV?ao=20&key=i3iUaA095n&n=343158.PDF>. The report collects and presents data for G20 countries: 'Water availability per capita has declined in the last 50 years, so that now Saudi Arabia, South Africa and South Korea are officially (according to UN definitions) water scarce. India is officially water stressed'.

47 McKinsey Report (n 29) forecasts: 'By 2030, demand in India will grow to almost 1.5 trillion m³, driven by domestic demand for rice, wheat, and sugar for a growing population, a large proportion of which is moving toward a middle-class diet. Against this demand, India's current water supply is approximately 740 billion m³. As a result, most of India's river basins could face severe deficit by 2030 unless concerted action is taken, with some of the most populous including the Ganga, the Krishna, and the Indian portion of the Indus facing the biggest absolute gap'. http://www.mckinsey.com/client_service/sustainability/latest_thinking/charting_our_water_future.

48 S K Jain, P K Agarwal and V P Singh *Indus Basin: Hydrology and Water Resources of India*, (Springer 2007). The Indus originates in Mount Kailash in Tibet on the north side of the Himalayas at an altitude of some 5486 metres, traversing China, Afghanistan, India and Pakistan for 2880 kilometres before entering the Arabian Sea.

49 The Kosi, Nepal's largest river, originates in Tibet. The Kosi enters India near Hanumangarh and 20 km downstream joins the Ganges near Khursela in the State of Bihar.

50 UNEP 'Freshwater resources under threat: South Asia vulnerability assessment of freshwater resources to environment change' (2009) http://www.roap.unep.org/pub/southasia_report.pdf.

51 M Bisht 'Water diplomacy and India's National Strategy', in K Venkatshamy and P George (eds), *Grand Strategy for India "2020 and Beyond* (Institute For Defence Studies and Analyses 2012).

Pakistan);⁵² the 1996 interim agreement on the Ganges (Bangladesh); and four bilateral treaties with Nepal – the Kosi Agreement (1954), Gandak Agreement (1959),⁵³ Tanakpur Agreement (1991)⁵⁴ and Mahakali Treaty (1996).⁵⁵ India does not have any treaties with China, but a Strategic Economic Dialogue (SED) between the two nations provides a forum to discuss water-related issues.⁵⁶ Despite this, tensions between India and China over their shared transboundary water resources appear to continue to escalate⁵⁷ and regional alliances continue to evolve with China and Pakistan recently pledging to support each other's sovereignty and territorial integrity, which could affect Sino-Indian relations over water.⁵⁸

52 Treaty between India and Pakistan Regarding the Use of the Waters of the Indus, in force 1 April 1960, 419 UNTS 125 (1960) (Indus Water Treaty) <http://siteresources.worldbank.org/INTSOUTHASIA/Resources/223497-1105737253588/IndusWatersTreaty1960.pdf>.

53 Agreement Between His Majesty's Government of Nepal and the Government of India on the Gandak Irrigation and Power Project Kathmandu (4 December 1959).

54 The Treaty between His Majesty's Government of Nepal and the Government of India concerning the Integrated Development of the Mahakali River including Sarada Barrage, Tanakpur Barrage and Pancheshwar Project (February 12 1996) 36 *ILM* 531 art 11. 55 *ibid* pp 531–46.

56 India has taken up the issue of cooperation on Himalayan rivers with China during the recent visit to Beijing of a high-level Indian delegation led by Planning Commission Deputy Chairman Montek Singh Ahluwalia. India has asked China to increase data-sharing on the Brahmaputra and Sutlej rivers. Both the rivers originate in Tibet and are major sources of potable water and irrigation needs downstream in India, particularly in India's north-eastern sector. *India Water Review* (28 September 2011) <http://www.indiawaterreview.in/Story/Policy/india-takes-up-issue-of-himalayan-rivers-cooperation-with-china/394/16>.

SED covers 7 thematic areas: world economic situation, respective domestic macro-economic situations, mid- and long-term development plans, improving investment environment, energy efficiency and conservation and environmental protection, infrastructure cooperation and water use efficiency; see J T Karackattu 'India-China strategic economic dialogue: another positive step' http://www.idsa.in/idsacomments/India-ChinaStrategicEconomicDialogueAnotherPositiveStep_JoeThomas_031011. 57 'Unquenchable thirst: A growing rivalry between India, Pakistan and China over the region's great rivers may be threatening South Asia's peace' *The Economist* (19 November 2011) <http://www.economist.com/node/21538687>.

58 At the Boao Forum for Asia (1 April 2012), China and Pakistan pledged support for each other – 'China's friend is our friend, and China's enemy is ours,' Prime Minister Gilani assured the Chinese leader, in a meeting held at the State Guest House. Gilani said Pakistan considers China's security as its own security and supports China's position on Taiwan, Tibet and Xinjiang. China's Executive Vice Premier categorically said that China would support Pakistan's sovereignty and territorial integrity in every situation. 'No matter what changes take place at international level, we will uphold Pakistan's sovereignty and territorial integrity,' he said, and added Pakistan and China are strategic partners that respect and trust each other at equal level. He said China supports Pakistan's role in regional and international affairs. Prime Minister Gilani said Pakistan was grateful to the Chinese support for upholding Pakistan's sovereignty, independence and territorial integrity.' <http://dawn.com/2012/04/01/pakistan-china-to-stand-with-each-other-in-all-circumstances/>.

India and Pakistan have a history of cooperation and peaceful dispute resolution involving the Indus, under the umbrella of the 1960 Indus Treaty, which divided six major transboundary rivers of the Indus system between the two nations (India was allocated the Eastern rivers – the Sutlej, the Beas and the Ravi – and Pakistan the Western rivers – the Indus, the Jhelum and the Chenab). The Indus Treaty agrees:

the rights and obligations of each in relation to the other concerning the use of these waters and of making provision for the settlement, in a cooperative spirit, of all such questions as in regard to the interpretation or application of the provisions agreed upon herein.

Article VI of the Treaty deals with the continuous exchange of information 'between the Parties regularly' with daily data collections that are to be transmitted monthly. Article VII deals with operational measures towards '[a] common interest in the optimal development of the rivers' through setting up of Meteorological observation stations. The joint mechanism for cooperation is accomplished through the establishment of the Permanent Commission, which is a channel for communication for the cooperative agreement (Article VIII). The Treaty has provided a platform for the peaceful settlement of disputes between the Parties; the Balighar Dam issue has been resolved by arbitration⁵⁹ and a recent dispute (raised by Pakistan)⁶⁰ related to the Kishanganga hydroelectric project on the Jhelum has been referred to the Permanent Court of Arbitration⁶¹ and is currently pending, with an interim order on the matter issued in 2011,⁶² and a decision on the merits

59 In 2005 an independent arbitrator was appointed to decide the outcome of a dispute between Pakistan and India under the Indus Treaty related to the construction by India of the Baglihar dam, which Pakistan claimed violated the Treaty. The arbitrator permitted the construction of the dam, but required some modifications in line with Pakistan's concerns. Pakistan was not entirely pleased with the outcome but agreed to abide by the decision of the arbitrator. See M A Salman 'The Baglihar difference and its resolution process: a triumph for the Indus Waters Treaty?' (2008) *Water Policy* 10 105–17.

60 P Malhotra 'Water: an Opportunity for SAARC?' Institute for Peace and Conflict Studies <http://www.ipcs.org/article/india-the-world/water-an-opportunity-for-saarc-3127> (14 May 2010).

61 The seven-member Court of Arbitration is chaired by Judge Stephen M. Schwebel (US), former President of the ICJ.

62 'The Court considers that while this arbitration is pending, and subject to any agreement between the Parties as to the implementation of the present Order, India may: (i) erect temporary cofferdams and operate the by-pass tunnel it has said to have completed; (ii) temporarily dry out the riverbed of the Kishenganga/Neelum at the Gurez valley; (iii) excavate the riverbed; and (iv) proceed with the construction of the sub-surface foundations of the dam. However, as specified above, until the Court renders its award, India may not construct any other permanent works on or above the riverbed that may inhibit the restoration of the full flow of that river to its natural channel'. *Pakistan v India* Order on the Interim Measures (September 2011) Permanent Court of Arbitration, Indus Waters Kishenganga Arbitration Application of Pakistan (6 June 2011) <http://www.pca-cpa.org/upload/files/16.%20Order%20on%20Interim%20Measures%20dated%2023%20September%202011.pdf>

expected in 2013.⁶³

India concluded an agreement on the Ganges with Bangladesh for 'sharing the waters of the international rivers flowing through territories of the two countries ... [for] irrigation, river basin development and hydropower generation'.⁶⁴ Integral to the implementation of the agreement is the Joint Committee established to 'observe and record at Farakka the daily flow below Farakka barrage, in the Feeder canal, at the Navigation Lock, as well as at the Hardinge Bridge' (Article IV). The manner of cooperation in terms of meetings and exchange of information has been left to the Committee (Article V). One commentator has postulated that 'an analysis of the Bangladesh-India water engagement reveals that *securing equitable water allocation* plays a primary role in shaping the element of reciprocity between both countries'.⁶⁵ The Joint River Commission now reviews a transboundary hydroelectric dam project on the Barak River, which Bangladesh fears will adversely affect water flow downstream in its territory.⁶⁶

The bilateral engagement on the Ganges belies the fact that the basin is shared by four countries (India, Nepal, China and Bangladesh) and eleven Indian states; the combined Ganges-Brahmaputra-Meghna basin spreads across Bangladesh, Bhutan, India, Nepal, and China. The greater Himalayan river basins are shared by seven countries: Afghanistan, Bangladesh, Bhutan, China, India, Nepal, and Pakistan. This connection across the Himalayas has fostered 'a cooperative and knowledge-based partnership of states fairly managing and developing the Himalayan River systems to bring economic prosperity, peace and social harmony, and environmental sustainability from source to sea'.⁶⁷ Recent studies on the Ganges within this context have provided new insights on the benefits of basin-wide development, challenging some of the traditional assumptions and demonstrating the importance of

information, institutions and investments as cornerstones for basin-wide cooperation.⁶⁸

India has bilateral engagements with Nepal, with some four water-related treaties. Each of the agreements reaffirms 'the determination to promote and strengthen their relations of friendship and close neighbourliness for the co-operation in the development of water resources'. The Mahakali Agreement (on a border river and aimed at construction of the Sarada Barrage in the Mahakali river) was concluded 'on the basis of equal partnership to define the obligations and corresponding rights and duties thereto in regard to the waters of the Mahakali River and its utilization'.⁶⁹ The agreement has detailed provisions related to specific amounts of water to be delivered and under Article 5 the parties agree that the 'water requirements of Nepal shall be given prime consideration in the utilization of the waters of the Mahakali River'. The arrangement includes energy sales by Nepal to India (Article 3) and establishes the Mahakali River Commission (Article 9), which is 'guided by the principles of equality, mutual benefit and no harm to either party' and mandated to 'make recommendations' and 'take steps' necessary to implement the treaty. The agreement provides for dispute settlement under the Commission and then for arbitration (Article 11). However, cooperation remains tentative and current news and a recent book challenges the arrangements.⁷⁰ The most recent meeting of the Nepal-India Joint Committee on Water Resources (24 January 2013) discussed how the two countries could move forward with cooperation under the treaty, despite problems (due to differences between the parties, as the proposed Pancheswor Development Authority has not yet been established and there were problems with floods and embankment). The meeting also considered a bilateral power trade agreement based on a number of joint projects on shared transboundary waters.⁷¹

63 On 18 February 2013 the Court of Arbitration rendered a Partial Award; see http://www.pca-cpa.org/showpage.asp?pag_id=1392. See press release (1 September 2012) setting out the positions and arguments of the parties during the two-week hearing on the merits.

64 Preamble, Treaty between the Government of the People's Republic of Bangladesh and the Government of India on sharing of the Ganga/Ganges Waters at Farakka New Delhi (12 December 1996) *ILM* 36 pp 519–28.

65 M Bisht 'Water Diplomacy and India's National Strategy' in V Krishnappa, M G Princy *Grand Strategy for India 2020 and Beyond* (Pentagon Security International IDSA 2012) p 318.

66 'India, Bangladesh hold talks on water issues' *Jagran Post* (2 February 2013).

67 Presentation at Stockholm World Water Week (21 August 2011) 'Promoting Cooperation in the Ganges Basin through Dialogue, Analysis, and Projects' http://www.worldwaterweek.org/documents/WWW_PDF/2011/Sunday/K23/Promoting-Cooperation-in-the-Ganges-Basin-through-Dialog/Connors-SAWI-Seminar-ADD-Retrospective.pdf.

68 See 'The Ganges Strategic Basin Assessment' Stockholm World Water Week 'Promoting Cooperation' (ibid) http://www.worldwaterweek.org/documents/WWW_PDF/2011/Sunday/K23/Promoting-Cooperation-in-the-Ganges-Basin-through-Dialog/The-Ganges-Strategic-Basin-Assessment.pdf.

69 Note 54.

70 S Dutta Pant *Water Politics on Nepal's Fresh Water* (Shastra Dutta Pant, Nepal 2012). See also S Dutta Pant 'Nepal study: India and Bangladesh have serious water disputes', *Telegraph Weekly* (12 September 2012) <http://www.telegraphnepal.com/views/2012-09-13/nepal-study:-india-and-bangladesh-have-serious-water-disputes>. This report focuses on the challenges that Bangladesh faces as a land-locked and downstream watercourse riparian on more than 50 major transboundary watercourses, including adverse impacts from floods and water scarcity that directly impact livelihoods and development in Bangladesh.

71 Nepal Energy Forum (17 January 2013) <http://www.nepalenergyforum.com/nepal-india-joint-committee-on-water-resources/>. Minutes of the seventh meeting of JCWR available at http://www.moen.gov.np/pdf_files/Minutes_seventh_meeting_of_JCWR.pdf.

India is central to riparian relations in this region and its bilateral relations with China over the waters of the Tibetan Plateau will affect the lower South Asian riparian nations. Shared water resources are an important element of India's relationship with at least four of its neighbours—Bangladesh, Bhutan, Nepal and Pakistan. The Brahmaputra River has caused tension between India and China and could be a future flashpoint for two of the world's emerging powers. Chinese proposals to divert the river have concerned India, especially since China confirmed that it is constructing a hydropower project on the Brahmaputra⁷² and also going ahead with dams on the Salween.⁷³ China plans to divert water as part of a larger hydro-engineering project, through the South-North water diversion scheme, which involves three man-made rivers carrying water from the Tibetan plateau to the arid north. Once completed, the water diversion scheme is expected to transfer over 40 billion cubic meters of water annually to China's water-scarce areas.⁷⁴ With the Yalong Tsangpo's waters being diverted, the amount of water in the Brahmaputra will fall significantly, affecting India's north east and Bangladesh. This will adversely impact on agriculture and fishing, creating increased salinity and silting in the downstream area.⁷⁵ One author has referred to China as the 'untamed riparian having control of trans-boundary rivers flowing through Nepal, India and Bangladesh', and concluded, with respect to India's engagement on transboundary waters, 'that while ingredients for cooperation are already present; a holistic vision to translate them into a grand strategic design is perhaps missing'.⁷⁶

Ethiopia and the Nile

As the world's longest river, the Nile is comprised of two main river systems: the White Nile, with its sources on the Equatorial Lake Plateau, and the Blue Nile, with its sources in the Ethiopian highlands. The Nile River basin is shared by 10 countries (Egypt, Sudan, Ethiopia, Eritrea, Tanzania, Uganda, Burundi, Rwanda, D R Congo, and Kenya). All

the waters in Burundi and Rwanda and more than half the waters in Uganda are produced internally, while most of the water resources of Sudan and Egypt originate outside their borders: 77 per cent of Sudan's and more than 97 per cent of Egypt's water resources.⁷⁷ This means that more than 95 per cent of Egypt's water depends on rainfall outside its territory and is downstream. Furthermore, the splitting of the Sudan into North and South Sudan has created a new country on the Nile which will increase the sharing of the Nile River basin.⁷⁸

Upstream on the Blue Nile, Ethiopia continues its preparations to construct the Grand Renaissance dam, which has been challenged by Egypt. In this case the downstream state, for a number of reasons, is the controlling riparian, claiming that its existing uses of the Nile are to be fully protected and should not be adversely affected by developments upstream in Ethiopia.

From 1999 the Nile Basin Initiative (NBI) has fostered cooperation across the Nile, as an interim arrangement until the Member States could agree on a permanent legal and institutional framework for the sustainable development of the Nile Basin. The initiative is comprised of Council of Ministers of Water Affairs of the Nile Basin (Nile-COM), a Technical Advisory Committee (Nile-TAC) and the Secretariat (Nile-SEC).⁷⁹ The NBI has a shared vision 'to achieve sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile Basin water resources'.⁸⁰ The parties have attempted to conclude a basin-wide framework instrument, but the Cooperative Framework Agreement (CFA) remains stalled, despite a consensus on all provisions⁸¹ apart from Article 14(b) which refers to water

77 FAO 'Irrigation potential in Africa: A basin approach' FAO Land and Water Bulletin 4 (1997) <http://www.fao.org/docrep/w4347e/w4347e0k.htm>.

78 UN 'North and South Sudan make "significant" progress on steps for separation' (9 February 2011) <http://www.un.org/apps/news/story.asp?NewsID=37501&Cr=sudan&Cr1>.

79 Nile Basin Initiative Governance http://www.nilebasin.org/newsite/index.php?option=com_content&view=section&layout=blog&id=6&Itemid=69&lang=en.

80 Objectives of the Nile Basin Initiative include:

- To develop the Nile Basin water resources in a sustainable and equitable way to ensure prosperity, security, and peace for all its peoples
 - To ensure efficient water management and the optimal use of the resources
 - To ensure cooperation and joint action between the riparian countries, seeking win-win gains
 - To target poverty eradication and promote economic integration
 - To ensure that the program results in a move from planning to action.
- http://www.nilebasin.org/newsite/index.php?option=com_content&view=article&id=71%3Aabout-the-nbi&catid=34%3Anbi-background-facts&Itemid=74&lang=en.

81 The CFA has 45 provisions relating to 'the use, development, protection, conservation and management of the Nile River Basin and its resources and establishing an institutional mechanism for cooperation among the Nile Basin States'.

72 I Bagchi 'China admits to Brahmaputra project' *Economic Times* <http://economictimes.indiatimes.com/news/politics/nation/China-admits-to-Brahmaputra-project/articleshow/5842624.cms>. S. Srivastava 'India Spars with Pakistan, China over Water' *Asia Sentinel* http://www.asiasentinel.com/index.php?option=com_content&task=view&id=2251&Itemid=174.

73 J Kaiman 'Hydro dams could jeopardise "Grand Canyon of the east" say green groups' (29 January 2013) *The Guardian* <http://www.guardian.co.uk/environment/2013/jan/29/hydro-dams-china-ecosystem>.

74 S Ramachandran 'India quakes over China's water plan' <http://www.atimes.com/atimes/China/JL09Ad01>.

75 M Zulfiqur Rahman 'Dams on the Brahmaputra: Concerns in Northeast India' (28 September 2010) <http://www.ipcs.org/article/bangladesh/dams-on-the-brahmaputra-concerns-in-northeast-india-3245>.

76 Bisht (n 65) p 327.

security, which is not acceptable to Sudan and Egypt.⁸²

That provision reads as follows.

Having due regard for the provisions of Articles 4 and 5, Nile Basin States recognize the vital importance of water security to each of them. The States also recognize that cooperative management and development of the waters of the Nile River systems will facilitate achievement of water security and benefits. Nile Basin States therefore agree, in a spirit of cooperation, (a) to work together to ensure that all states achieve and sustain water security, (b) not to adversely affect the water security of any other Nile Basin State.

The CFA was opened for signature on 14 May 2010 in Entebbe, Uganda at the NBI secretariat offices. As at June 2013, Egypt and Sudan have not signed the CFA, but Ethiopia, Burundi, Kenya, Rwanda, Tanzania and Uganda have all signed, while Democratic Republic of Congo and newly independent South Sudan have said they also intend to join. The CFA will enter into force when six countries have ratified it, a process that now continues.

The agreement sets forth a commitment to the principle of cooperation:

On the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilization and adequate protection and conservation of the Nile River Basin and to promote joint efforts to achieve social and economic development. (Article 3)

The governing substantive rule follows the UNWC and is contained in Article 4.

Nile Basin States shall in their respective territories utilize the water resources of the Nile River system and the Nile River Basin in an equitable and reasonable manner. In particular, those water resources shall be used and developed by Nile Basin States with a view to attaining optimal and sustainable utilization thereof and benefits therefrom, taking into account the interests of the Basin States concerned, consistent with adequate protection of those water resources. Each Basin State is entitled to an equitable and reasonable share in the beneficial uses of the water resources of the Nile River system and the Nile River Basin.

This provision is supplemented by additional substantive rules (obligation not to cause significant harm, protection of the basin and ecosystems); procedural rules (including Environmental Impact Assessment and audits, duty to

exchange information) and the establishment of an institutional mechanism – The Nile River Basin Commission to ‘promote and facilitate implementation’ of the agreement (Article 15).

Whether or not the CFA will become a regional instrument for cooperation remains to be seen. The Egyptian Ambassador to Rwanda suggested that the Nile should be a source of regional peace and suggested continued dialogue as the way forward.⁸³ At the 2013 Arab Water Week convened in Jordan with delegates from 18 Arab countries, HRH Princess Sumaya bint El Hassan called on Arab nations to work together in order to solve the growing water crisis in the Arab world, stating that ‘This fundamental movement of water across borders should act as a constant reminder to us all that water resources cannot be owned or controlled by single national authorities’.⁸⁴ The group discussed transboundary water issues and agreed that these should be shared across national borders.

III.1.2 Doctrine / judicial decisions

A quick survey of relevant judicial and arbitral decisions in this field provides further insights into the topic at hand. The prevailing discourse has been around the duty to cooperate arising out of substantive and procedural rules, usually detailed in treaties. In one of the earliest cases in this area, the Permanent Court of International Justice in the *River Oder* decision held that ‘[the] community of interest in a navigable river becomes the basis of a common legal right, the essential features of which are the perfect equality of all riparian States in the user of the whole course of the river and the exclusion of any preferential privilege of any one riparian State in relation to the others’ (*Territorial Jurisdiction of the International Commission of the River Oder* Judgment No 16 (1929) PCIJ Series A No 23 p 27). The community-of-interests concept has appeared subsequently in several cases and provides the foundation for notions of hydro-diplomacy and hydro-solidarity being discussed in the literature and in global forums.

83 S Babijja ‘Rwanda: Nile Waters Should Be a Source of Cooperation [says] Egyptian Envoy’ (*All Africa* (2 February 2013) <http://allafrica.com/stories/201302040096>) reports: ‘After the revolution in 2011, we focused on placing relations with our counterparts in the region and beyond, especially basing on our foreign policy priorities,’ said Rahman in an exclusive interview. ... Rahman explained that his government was committed to building on the existing foundation in promoting peace in the region through dialogue on how countries can benefit from the Nile River.’ However, other reports claim that Egyptian Minister of Water Resources and Irrigation Dr Mohamed Bahaeddinein has stated that it was uncertain whether Egypt would sign the CFA.

84 ‘Water sharing across MENA raised at Arab Water Week 2013’ (27 Jan 2013) <http://www.waterworld.com/articles/2013/01/water-sharing-across-mena-raised-at-arab-water-week-2013>.

82 Sudan and Egypt have recently reaffirmed their allegiance on this position ‘The Nile River: Egypt and Sudan firm up water alliance’ (18 September 2012) <http://www.africareview.com/Special+Reports/Khartoum+and+Cairo+Nile+River+ties/-/979182/1510906/-/yttq5qz/-/index>.

In the *Gabikovo-Nagymaros* case the ICJ found that the duty to cooperate was located within the 'joint regime' created under the treaty:

The Project was to have taken the form of an integrated joint project with the two contracting parties on an equal footing in respect of the financing, construction and operation of the works. Its single and indivisible nature was to have been realized through the Joint Contractual Plan which complemented the Treaty.⁸⁵

Justice Weeramantry in his separate opinion suggested the cooperation would be a continuing one, through the on-going monitoring and exchange of information.⁸⁶ In the *Case Concerning the Land, Island and Maritime Frontier Dispute* there was considerable reference to the community-of-interests notion by all parties, as Honduras, El Salvador and Nicaragua argued about the application of that principle to their dispute over the Gulf of Fonseca.⁸⁷ In this context, the ICJ expounded on the concept of co-ownership or *condominio* where 'the waters of the Gulf have remained undivided and in a state of community which entails a condominium or co-ownership'. The Court examined the 'community of interests' concept raised by Honduras and declared that 'it seems odd to postulate such a community as an argument against a condominium which is almost an ideal embodiment of the community of interest requirements of equality of user, common legal rights and the "exclusion of any preferential privilege"'.⁸⁸

In the *Pulp Mills case (Argentina v Uruguay)*, the ICJ found that Uruguay had breached its treaty-based obligations to cooperate with Argentina through failing to abide by the procedural duties vis-à-vis the Administrative Commission of the River Uruguay (CARU) during the development of plans to construct pulp mills on the Uruguay river.⁸⁸ The Court pointed out that 'the 1975 Statute places the Parties under a duty to co-operate with each other, on the terms therein set

out, to ensure the achievement of its object and purpose', this obligation to co-operate encompassing on-going monitoring of an industrial facility, such as the Orion (Botnia) mill' (paragraph 281). The ICJ found also that '[t]he Parties have a legal obligation . . . to continue their co-operation through CARU and to enable it to devise the necessary means to promote the equitable utilization of the river, while protecting its environment' (paragraph 266).⁸⁹ Part of the procedural duties included conducting an Environmental Impact Assessment (EIA) which the Court stated was 'required under Article 41 of the 1975 Statute and under general international law' (paragraphs 204-05). The Court observed that an EIA should include, at a minimum, '[a] description of practical alternatives'.⁹⁰ The Court did not find any breach of substantive duties under the treaty. Reflecting on this approach McIntyre suggests that this demonstrates a possible 'proceduralisation' of international water law, which is the operational arm of the duty to cooperate in this field.⁹¹

Under the *Lac Lanoux* arbitration the Tribunal referred to the 'compromises of interest' that needed to be made in the shared uses of a transboundary watercourse holding that:

States are today perfectly conscious of the importance of the conflicting interests brought into play by the industrial use of international rivers, and of the necessity to reconcile them by mutual concessions. The only way to arrive at such compromises of interests is to conclude agreements on an increasingly comprehensive basis. International practice reflects the conviction that States ought to strive to conclude such agreements; there would thus appear to be an obligation to accept in good faith all communications and contacts which could, by a broad confrontation of interests and by reciprocal good will, provide States with the best conditions for concluding agreements.⁹²

85 *Gabikovo-Nagymaros Project Hungary-Slovakia* ICJ (25 September 1997) (1998) 37 *ILM* 162 p 21.

86 Weeramantry states: 'A continuous monitoring of the scheme for its environmental impacts will accord with the principles outlined, and be a part of that operational régime. Indeed, the 1977 Treaty, with its contemplated régime of joint operation and joint supervision, had itself a built-in régime of continuous joint environmental monitoring.' Decision <http://www.icj-cij.org/docket/files/92/7383.pdf>.

87 *Costa Rica v Nicaragua* ICJ case concerning the dispute regarding navigational and related rights; summary of judgment (13 July 2009); *El Salvador v Honduras, Nicaragua intervening* ICJ, case concerning the land, island and maritime frontier dispute (September 1992).

88 *Argentina v Uruguay* case concerning pulp mills on the River Uruguay ICJ General List no 135 (2010) Decision <http://www.icj-cij.org/docket/files/135/15873.pdf>. See G R Moncayo and M Moncayo von Hase, 'The International Court of Justice and the environment: the Recent *Paper Mills Case*' in Fastenrath et al *From Bilateralism to Community Interest Essays in Honour of Bruno Simma* (eds OUP 2011) pp 1024–39.

89 The Court adds that 'both Parties have the obligation to enable CARU, as the joint machinery created by the 1975 Statute, to exercise on a continuous basis the powers conferred on it by the 1975 Statute, including its function of monitoring the quality of the waters of the river and of assessing the impact of the operation of the Orion (Botnia) mill on the aquatic environment'; *Argentina v Uruguay* (ibid).

90 ICJ Press Release, <http://www.icj-cij.org/docket/files/135/15873.pdf>. The Court observed that EIA 'has gained so much acceptance among States that it may now be considered a requirement under general international law to undertake an environmental impact assessment where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context, in particular, on a shared resource.' (para 203–4).

91 O McIntyre 'The Proceduralisation and Growing Maturity of International Water Law' (2010) 22 *Journal of Environmental Law* 475; see also O McIntyre 'Improving Transboundary Water Governance through the Application of Integrated Water Resources Management' UNEP <http://www.unep.org/environmental-governance/LinkClick.aspx?fileticket=wFwYAbq1-o%3D&tabid=604&language=en-US>.

92 *Lac Lanoux* Arbitration, 12 RIAA (1957) 281–317; 24 *ILR* 1957, 101; reproduced in 62 RGDIP 1958; <http://www.unep.org/environmental-governance/LinkClick.aspx?fileticket=wFwYAbq1-o%3D&tabid=604&language=en-US>.

IV Pulling it all together – the emergence of dynamic cooperation as a norm governing international water resources

'International law has undoubtedly entered a stage at which it does not exhaust itself in correlative rights and obligations running between states, but also incorporates common interests of the international community as a whole ... In other words, it is on its way to being a true public international law.'⁹³

International law has evolved, and continues to evolve, around the elastic concept of cooperation, a notion that is dynamic both in substantive content and procedural application.⁹⁴ The 'larger freedom' promoted by the fundamental tenets of the UN Charter, integral to the law of nations, as a legal paradigm must be taken to exist within and beyond national borders. While the shadow of state sovereignty will always remain, its length and depth is retreating with the expanding horizon of global interdependence. While the '*S-factor*' will always figure in the concrete configuration and realisation of the duty to cooperate, it will not and cannot, be controlling. In the context of transboundary water resources management, as surveyed above, the contours of dynamic cooperation in international law have been elucidated through extensive treaty and state practice, supplemented by doctrine and scholarship in the field. At the conceptual level, the notion is bound up with the basic premises of state sovereignty,⁹⁵ which will continue to provide the context for its evolution and application.⁹⁶

Two-thirds of the world's transboundary watercourses are not covered by international agreements, and thus are covered by the rules of customary international law, founded upon the duty to cooperate, as the bedrock of the international legal system. Upstream states that control the headwaters of waterways, for example, China, Brazil, India,

Turkey, or downstream states in powerful positions,⁹⁷ such as Egypt on the Nile – have opportunities to control the nature of the 'cooperation' on the shared watercourse – but this is limited by the international law of the duty to cooperate and the overarching principle of equitable and reasonable use, which preclude unilateral acts of absolute sovereignty in breach of these rules.

In transboundary water state practice, dynamic cooperation is realised through the implementation of the substantive and procedural rules that apply, and in practice, this can be largely process-oriented (linked with communication, exchange of information, consultation, management) and is continuous in nature.⁹⁸ In this regard, cooperation can be facilitated through joint planning, such as is promoted under the concept of integrated water resources management.⁹⁹ States have found diplomatic and technical means to cooperate over water, although bilateral approaches on watercourses that cross more than two states would appear to be inconsistent with basin-wide management. However, international agreements, supported by joint bodies, go a long way to facilitating transboundary cooperation. In most of the case studies surveyed above, disagreements over transboundary waters have occurred primarily where there was no water-related treaty or joint body in place. International agreements (treaties and conventions) and institutional mechanisms (such as meeting of the parties, river basin organisations) provide a locus for working through problems, including where disputes arise (ie the case on the Indus).

Cooperation is strengthened where trust is high, demonstrated in the traditional 'Prisoner's Dilemma', where cooperation is seen as a measure of gaining a reputation for trustworthiness, others will be willing to cooperate with them to overcome 'natural resources "dilemmas"', which leads to increased gains for themselves

93 B. Simma 'Universality of International Law from the Perspective of a Practitioner' (2009) 20 Eur. J. Intl Law pp 265–97 p 268, cited in B Kingsbury, M Donaldson 'From Bilateralism to Publicness in International Law', in Fastenrath (n 88) pp 79–89. In the same collection, see also C J Tams 'Individual States as Guardians of Community Interests' pp 379–405.

94 The origins of the term 'dynamic' are tracked back to 1817 as a term in philosophy; in the sense 'force producing motion,' from French *dynamique* (1762), from German *dynamisch* introduced by Leibnitz (1691) from Greek *dynamikos* 'powerful,' from *dynamis* 'power,' from *dynasthai* 'be able to have power,' of unknown origin. The figurative sense of 'active, potent, energetic' is from 1856. Related: Dynamically. <http://dictionary.reference.com/browse/dynamic>.

95 Fastenrath (n 88) see also B R Roth *Sovereign Equality and Moral Disagreement* (OUP 2012); also A Chayes and Chayes *The New Sovereignty: Compliance with International Regulatory Agreements* (Harvard University Press 1998).

96 M E O'Connell *The Power and Purpose of International Law* (OUP 2011) who asserts: 'The world is poised for another important transition'.

97 Salman M A Salman 'Downstream Riparians Can Also Harm Upstream Riparians: The Concept of Foreclosure of Future Uses' (2010) *Water International* vol 35 (4) pp 350–64.

98 Justice Weeramantry in a separate opinion in the *Gabikovo-Nagyymaros* case (n 85) highlighted the need for such continuous cooperation through 'monitoring and exchange of information': 'A continuous monitoring of the scheme for its environmental impacts will accord with the principles outlined, and be a part of that operational régime. Indeed, the 1977 Treaty, with its contemplated régime of joint operation and joint supervision, had itself a built-in régime of continuous joint environmental monitoring'.

99 The Global Water Partnership (GWP) defines 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/>.

and their offspring'. The process of cooperation relies heavily upon institutions, from legal frameworks to institutional mechanisms and bodies, which are created by sovereign states as conduits for cooperation.¹⁰⁰ In the area of transboundary water resources management, recent practice has revealed innovative ideas and approaches to ensure the continued dynamism of transboundary water cooperation.¹⁰¹ Clearly, serious challenges remain, as shown above in some of the selected case studies, but hope springs eternal – as the world shrinks, possibilities grow.¹⁰²

100 M Ignatieff 'The return of sovereignty' *The New Republic* (25 January 2012) <http://www.tnr.com/article/books-and-arts/magazine/100040/sovereign-equality-moral-disagreement-government-roth>. Ignatieff observes: 'Sovereigns themselves cannot function without intermediating institutions to put experts, citizens, and governments together in rooms to coordinate solutions to problems that cannot be solved in national capitals or boardrooms alone. The institutions of global governance are allowed to coordinate, but they are not allowed to rule'. He concludes, 'The paradoxical conclusion of all of this is that if we want individuals to face less oppression, violence, and fear in this world, we should wish for stronger sovereigns, not weaker ones. By stronger I mean more capable, more responsible, and more legitimate. If we want human rights to be anchored in the world, we cannot want their enforcement to depend on international institutions and NGOs. We want them anchored in the actual practice of sovereign states. If we want markets that deliver jobs, income, and security to the people of the world, we want sovereigns with the coercive capacity to force market actors to take responsibility for their risks. If we want a politics that offers us real opportunities to control our lives, we want stronger sovereigns, and if we want our political deliberations to remain connected to realities, we would want them disciplined by a shared common sense about the irreplaceable responsibilities of sovereign authority.' <http://www.tnr.com/article/books-and-arts/magazine/100040/sovereign-equality-moral-disagreement-government-roth?page=0,1>.

101 See, as only one example, the arrangement agreed by then US Secretary of State Hillary Clinton of a partnership to promote conservation and improved management in conjunction with corporations such as Coca-Cola and Ford and nongovernmental organizations such as the Nature Conservancy. <http://www.nytimes.com/2012/03/23/world/us-intelligence-report-warns-of-global-water-tensions>.

102 E Benvenisti 'Sovereigns as Trustees of Humanity: The Concept and its Normative Implications' http://www.wzb.eu/sites/default/files/u32/eyal_benvenisti_sovereigns_as_trustees_of_humanity_july_3rd_2012.pdf 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.' Benvenisti concludes his study with this assertion: '... the trustee sovereignty concept suggests that sovereigns have an obligation to mutually explore and develop the most effective domestic and supranational institutions in response to the challenges to efficiency, equity and democracy that result from the system of sovereign states'.