

# 'Dynamic cooperation' in international law and the shadow of state sovereignty in the context of transboundary waters

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*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 article 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. The declaration of 2013 as the UN International Year of Water Cooperation has helped to provide 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.*

## Introduction\*\*

*The only thing that will redeem mankind is cooperation.*  
Bertrand Russell<sup>1</sup>

*Water is the driving force of all nature.*  
Leonardo da Vinci<sup>2</sup>

Some of the world's leading thinkers are exploring 'cooperation' as the foundation for global peace and security and even to explain life on earth, building upon and extending significantly the parameters of past discourse on this topic. In *The Better Angels of Our Nature*, Pinker examines various models of cooperation and concludes in

his extensive study that: 'Humans are not innately good (just as they are not innately evil), but they come equipped with motives that can orient them away from violence and toward cooperation and altruism'.<sup>3</sup> Nowak, an evolutionary biologist, considers 'cooperation' to be central to the 'four-billion-year-old puzzle of life' and essential for survival in the future. In his book, *Super Cooperators*,<sup>4</sup> Nowak declares that: 'We are ... staring into the abyss of environmental catastrophe ... Although we are teetering on the brink of disaster, we are also on the brink of advancing to the next level of cooperation. I believe that climate change will force us to enter a new chapter of cooperation'.<sup>5</sup>

From a legal perspective, cooperation is the bedrock of international law, prescribing limits on absolute state sovereignty in a myriad of ways. The law of nations, reflected largely in the UN Charter,<sup>6</sup> is premised on the promotion and sustenance of peaceful international relations, regional peace and security and in ensuring and advancing the fundamental freedoms of all. These laudable objectives are behind the UN's work across the board, aimed at addressing social, cultural, economic and environmental challenges around the world, within and beyond national borders.

This article considers the *duty to cooperate* through the case study of transboundary waters and explores how the international community addresses the global water challenge through the rules of law applicable in this area. As explained in more detail below, the management of the world's water resources that cross national borders is one of the most pressing problems of the global community. While water is best managed at the local level, its interconnectivity across scales and sectors renders it a truly global concern. This has been confirmed in the recent (and

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1 British author, mathematician and philosopher (1872–1970).

2 Leonardo da Vinci, artist and scientist (1452–1519). See also Laurent Pfister, Hubert H G Savenije and Fabrizio Fenicia (eds) *Leonardo da Vinci's Water Theory: On the Origin and Fate of Water* (IAHS Special Publications) (2009).

3 Steven Pinker *The Better Angels of Our Nature: the Decline of Violence in History and Its Causes* (Kindle edn Penguin UK 2010) xxv, 729.

4 MA Nowak, R Highfield *Super Cooperators* (Canongate 2011) 277–78; MA Nowak 'Five rules for the evolution of cooperation' (2006) *Science* 314, 1560–63.

5 Nowak *Super Cooperators* (n 4) 277–78.

6 Charter of the United Nations and Statute of the International Court of Justice (24 October 1945) 1 UNTS XVI.

growing) raft of reports on the topic issued by the UN,<sup>7</sup> the World Bank,<sup>8</sup> the public and private sectors<sup>9</sup> and NGOs.<sup>10</sup> Read together these studies document the existing and emerging conflicts-of-use in this field, as the quality and quantity of international waters face serious challenges. From an international legal perspective, especially through the lens of global policy, the issues arising from these developments are linked directly to the fundamental tenets of the law of nations. This article explores the normative content and reach of the duty to cooperate in this context and considers how it contributes to advancing regional peace and security objectives, especially important during times of uncertainty and growing competition for dwindling resources.

The UN has declared 2013 the Year of Water Cooperation.<sup>11</sup> As anticipated, the global community is rallying around this clarion call, with UNWater (comprised of close to 30 UN bodies that work on water) and a broad spectrum of national, regional and global actors seeking to make a contribution to this initiative. Part of this endeavour must include international law, which has remained at the fringes of the global water discourse and has more to offer on a number of fronts. The legal community and water security community<sup>12</sup> would each benefit from closer interaction and, while some inroads have been made, there is room for continued innovation, critical thought and effective interface.

The largest meeting in recent times on sustainable development, convened under the auspices of the UN in Rio (Rio+20), resulted in a negotiated outcome entitled *The Future We Want*, endorsed by a UN resolution, which sets the agenda for future action in this field.<sup>13</sup> The document reiterates support for the rule of law and the fundamental tenets of the UN Charter, but fails to embrace cooperation in the area of transboundary water resources management, despite considerable inputs on this topic.<sup>14</sup> The global water community was disappointed with the outcome from Rio and has now coalesced around the mission to articulate a sustainable development goal (SDG) linked to water.<sup>15</sup>

## International law and the duty to cooperate

### Origins of the duty to cooperate in international law

*The need for a world-wide system of public order – a comprehensive plan of cooperation – is fearfully urgent.*

Harold Lasswell<sup>16</sup>

From its very origins, international law has focused on cooperation as the linchpin for the peaceful relations between nation states.<sup>17</sup> The establishment of the United

7 See the reports listed at [http://www.un.org/waterforlifedecade/transboundary\\_waters.shtml](http://www.un.org/waterforlifedecade/transboundary_waters.shtml).

8 World Bank Development Report 'Conflict, security, and development' (2011); World Bank 'West Bank and Gaza: assessment of restrictions on Palestinian water sector development' World Bank Sector Note (Washington DC 2009) 33 <http://siteresources.worldbank.org/INTWESTBANKGAZA/Resources/WaterRestrictionsReport18Apr2009.pdf>.

9 McKinsey & Company 'Charting our water future: economic frameworks to inform decision-making'; Maplecroft & Company 'New Maplecroft index rates Pakistan and Egypt among nations facing "extreme" water security risks' <http://maplecroft.com/about/news/water-security.html>.

10 Royal Academy of Engineering 'Global water security: an engineering perspective' (2010); World Economic Forum Global Agenda Council on Water, Global Agenda Council Reports 2010.

11 UN Resolution 'International Year of Water Cooperation' [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/65/154](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/65/154). The resolution was submitted by Tajikistan, co-sponsored by Afghanistan, Armenia, Australia, Bahrain, Bolivia, Chile, Costa Rica, Gabon, Honduras, Iraq, Kazakhstan, Madagascar, Mongolia, Nepal, Pakistan, Russia, Thailand and Ukraine. See also the Dushanbe Declaration on Water adopted in the High-level International Conference on the Midterm Comprehensive Review of the Implementation of the Decade of Action 'Water for life 2005–2015' (June 2012) <http://www.un.int/wcm/webdav/site/tajikistan/shared/International%20Year%20of%20Water%20Cooperation-2013.pdf>.

12 In this context the 'global water security community' refers broadly to the large number of public and private sector bodies that are engaged in the water sector, including such important players as UN Water and the Global Water Partnership, as just two examples.

13 UN Resolution 66/288 *The Future We Want* (11 September 2012) <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N11/476/10/PDF/N1147610.pdf?OpenElement>.

14 UN Water Statement for Rio+20 'Water in a green economy: a statement by UN Water for the UN Conference on Sustainable Development 2012', (Rio+20 Summit) para (8) states: 'Water challenges are a global concern and international action and cooperation at all level are required to accommodate them within the green economy. As recognised by the UN General Assembly Resolution 65/154 on the International Year of Water Cooperation 2013, there is an urgent need to develop appropriate water management frameworks and knowledge sharing networks for sound cooperation' <http://www.unctd2012.org/rio20/content/documents/303UN-water%20Rio20%20Statement%201%20NOV.2011.pdf>.

15 The United Nations General Assembly has established a working group that will focus on the design of a set of sustainable development goals (SDGs) to promote global prosperity, reduce poverty and advance social equity and environmental protection. The SDGs seek to guide countries in achieving targeted outcomes within a specific time period, such as on universal access to sustainable energy and clean water for all, and will build on the anti-poverty targets known as the millennium development goals (MDGs) after their 2015 deadline.

16 H Lasswell *The Future of Political Science* (1963) 242; see <http://www.un.org/waterforlifedecade/>.

17 M N Shaw *International Law* (Cambridge University Press Cambridge 2003). See also H Lauterpacht *The Function of Law in the International Community* (Oxford University Press Oxford 2011); Tai-Heng Cheng *When International Law Works: Realistic Idealism After 9/11 and the Global Recession* (Oxford University Press Oxford 2011); S C Neff 'A Short History of International Law' in M D Evans (ed) *International Law* (Oxford University Press Oxford 2003) [http://www.oup.com/uk/orc/bin/9780199565665/evans3e\\_ch01.pdf](http://www.oup.com/uk/orc/bin/9780199565665/evans3e_ch01.pdf); M Koskenniemi 'The history of international law today' (2004) *Rechtsgeschichte* <http://www.helsinki.fi/eci/Publications/Koskenniemi/MHHistory.pdf>.

Nations, following two World Wars, heralded a new era providing a platform for a new world order, including the rules and institutions set forth in the UN Charter.

Concluded in 1945, the Charter begins: 'We the people of the United Nations' and lists its fundamental purposes:

1. To maintain international peace and security, to take effective collective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of the peace, and to bring about by peaceful means, and in conformity with the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace;
2. To develop friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples, and to take other appropriate measures to strengthen universal peace;
3. To achieve international cooperation in solving international problems of an economic, social, cultural or humanitarian character, and in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion; and
4. To be a centre for harmonizing the actions of nations in the attainment of these common ends.

The United Nations is 'based on the principle of the sovereign equality of all its Members', who agree to 'settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered' and 'pledge themselves to take joint and separate action in cooperation with the Organization for the achievement of ... universal respect for, and observance of, human rights and fundamental freedoms for all'.<sup>18</sup>

In 1970 the UN adopted the Declaration of Principles of International Law, which included the 'duty of States to co-operate with one another in accordance with the Charter'<sup>19</sup> and emphasised the importance of cooperation within that context, referring extensively (some 21 times) to this notion, proclaiming the following duties:

- (a) States shall co-operate with other States in the maintenance of international peace and security;
- (b) States shall co-operate in the promotion of universal respect for, and observance of, human rights and fundamental freedoms for all, and in the elimination of all forms of racial discrimination and all forms of religious intolerance;
- (c) States shall conduct their international relations in the economic, social, cultural, technical and trade fields in accordance with the principles of sovereign equality and non-intervention.<sup>20</sup>

The principle of state sovereignty is confirmed and elaborated as follows: 'All States enjoy sovereign equality. They have equal rights and duties and are equal members of the international community, notwithstanding differences of an economic, social, political or other nature'. At the close of the instrument, the Declaration provides:

The principles of the Charter which are embodied in this Declaration constitute basic principles of international law, and consequently appeals to all States to be guided by these principles in their international conduct and to develop their mutual relations on the basis of the strict observance of these principles.

Whilst this is a declaratory instrument, it builds upon and consolidates previous UN work in this field, providing a first comprehensive work of this type. In a similar approach, the UN General Assembly adopted UN Resolution 2625 on the Principles of the Friendly Relations and Cooperation among States,<sup>21</sup> which begins with the duty to cooperate,<sup>22</sup> and recognises the need for joint and several actions towards achieving this obligation, based on the principles of sovereign equality and non-intervention.<sup>23</sup>

20 *ibid* cl 1: 'States have the duty to co-operate with one another, irrespective of the differences in their political, economic and social systems, in the various spheres of international relations, in order to maintain international peace and security and to promote international economic stability and progress, the general welfare of nations and international co-operation free from discrimination based on such differences'.

21 *ibid*.

22 *ibid* para (a): 'States shall co-operate with other States in the maintenance of international peace and security'.

23 *ibid* para (c): 'States shall conduct their international relations in the economic, social, cultural, technical and trade fields in accordance with the principles of sovereign equality and non-intervention'; para (d): 'States Members of the United Nations have the duty to take joint and separate action in co-operation with the United Nations in accordance with the relevant provisions of the Charter. States should co-operate in the economic, social and cultural fields as well as in the field of science and technology and for the promotion of international cultural and educational progress. States should co-operate in the promotion of economic growth throughout the world, especially that of the developing countries'.

18 UN Charter arts 55, 56.

19 United Nations Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States in Accordance with the Charter of the United Nations (24 October 1970) UN Doc A/RES/25/2625 <http://daccess-dds-ny.un.org/doc/RESOLUTION/GEN/NR0/348/90/IMG/NR034890.pdf?OpenElement>.

In current discourse, the UN's approach to the duty to cooperate has framed it as a global imperative:

In a world of interconnected threats and challenges, it is in each country's self-interest that all of them are addressed effectively. Hence, the cause of larger freedom can only be advanced by broad, deep and sustained global cooperation among states. Such cooperation is possible if every country's policies take into account not only the needs of its own citizens but also the needs of others. This kind of cooperation not only advances everyone's interests but also recognizes our common humanity.<sup>24</sup>

The report calls for regional policy and infrastructure cooperation and for the establishment of institutional mechanisms necessary to support economic development and cooperation.<sup>25</sup> The work builds upon the UN Report of the High-Level Panel on Threats, Challenges and Change, which asserted: 'Every State requires the cooperation of other States to make itself secure. It is in every State's interest, accordingly, to cooperate with other States to address their most pressing threats ...'.<sup>26</sup>

### Cooperation, state sovereignty and the emergence of environmental concerns

While the duty to cooperate has emerged as a global imperative in an increasingly interdependent world, the extent to which it legitimately encroaches upon state sovereignty remains firmly debated.<sup>27</sup> As global environmental, social and economic issues continue to grow, the lingering shadow of sovereignty has grown – the 'S-factor' that complicates the 'vexed relation between law and sovereignty'.<sup>28</sup> There is a vast literature on this topic, with renewed recent interest in light of contemporary global challenges. The discussion here will be limited to a short summary of the notion of sovereignty connected with the development of natural resources, which is aimed at providing a backdrop for the more detailed

examination of this concept as it relates to transboundary water issues.

Global and local concerns with sustainable development and the emergence of rules of international law in the field of the environment<sup>29</sup> led national governments to consider state sovereignty in the context of natural resources. In 1962 the UN adopted the UN Resolution on Permanent Sovereignty over Natural Resources, which set out basic principles concerned primarily with international development issues.<sup>30</sup> This focus changed over time, with an increased emphasis on resource development issues, notably advanced under Agenda 21 of the 1972 Stockholm Declaration, which called for a 'new global partnership', 'in order to meet the challenges of environment and development'; this provided a strong impetus for action in this field. Under Principle 21:

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.<sup>31</sup>

The integral role of cooperation appeared in Principle 24, albeit linked to sovereignty.<sup>32</sup>

A further evolution in this field relates to climate change and its link with human rights: 'Nowhere is international cooperation more important than in addressing global threats to human rights, such as climate change. While cooperation usually is necessary to support the state primarily responsible

24 UN Secretary-General Report 'In larger freedom: towards development, security and human rights for all' UN Doc A/59/2005 para 18 at 6.

25 'In larger freedom' (n 24) para 69 at 21.

26 UN Report of the High-Level Panel on Threats, Challenges and Change 'A more secure world: our shared responsibility' (2004) para 24 at 16 <http://www.un.org/secureworld/report2.pdf>.

27 B R Roth *Sovereign Equality and Moral Disagreement: Premises of a Pluralist International Legal Order* (Oxford University Press Oxford 2011). See also A-M Slaughter 'Security, solidarity, and sovereignty: the grand themes of UN reform' (2005) 99(3) *AJIL* 619–31; Tai-Heng Cheng *When International Law Works* (n 17); U Fastenrath and others (eds) *From Bilateralism to Community Interest: Essays in Honour of Bruno Simma* (Oxford University Press Oxford 2011).

28 M Ignatieff 'The return of sovereignty' *The New Republic* (25 January 2012) <http://www.npr.com/article/books-and-arts/magazine/100040/sovereign-equality-moral-disagreement-government-roth>.

29 On the rules of international law in the field of the environment see Patricia Birnie, Alan E Boyle and Catherine Redgwell *International Law & the Environment* (3rd edn Oxford University Press Oxford 2009); Daniel Bodansky *The Art and Craft of International Environmental Law* (Harvard University Press 2009); Philippe Sands *Principles of International Environmental Law* (2nd edn Cambridge University Press Cambridge 2003).

30 The General Assembly adopted Resolution 1803 (XVII) on the Permanent Sovereignty over Natural Resources on 14 December 1962 by 87 votes in favour to 2 against, with 12 abstentions. The resolution had resulted from the General Assembly's focus on, first, the promotion and financing of economic development in underdeveloped countries and, secondly, in connection with the right of peoples to self-determination in the draft international covenants on human rights [http://untreaty.un.org/cod/avl/ha/ga\\_1803/ga\\_1803.html](http://untreaty.un.org/cod/avl/ha/ga_1803/ga_1803.html). See also S M Schwebel 'The story of the UN's Declaration on Permanent Sovereignty over Natural Resources' (1963) 49 *ABAJ* 463; N Schrijver *Sovereignty Over Natural Resources* (Cambridge University Press Cambridge 2008).

31 Stockholm Declaration Principle 21.

32 *ibid* Principle 24: 'International matters concerning the protection and improvement of the environment should be handled in a cooperative spirit by all countries, big and small, on an equal footing. Cooperation through multilateral or bilateral arrangements or other appropriate means is essential to effectively control, prevent, reduce and eliminate adverse environmental effects resulting from activities conducted in all spheres; in such a way that due account is taken of the sovereignty and interests of all States'.

for fulfilling the rights of its people, in this case cooperation is the only practical way that the problem can be solved at all'.<sup>33</sup> While many of these rights are protected by the International Covenant on Economic, Social and Cultural Rights (ICESCR),<sup>34</sup> it is 'of great importance that the Covenant expressly recognizes the importance of international cooperation in achieving these rights'. Article 2(1) requires each of its parties 'to take steps ... through international assistance and *cooperation* ... with a view to achieving progressively the full realization of the rights'.<sup>35</sup> In exploring the imperatives for cooperation under the ICESCR, it is noted that it lists avenues for cooperation (Article 23)<sup>36</sup> and, in a general comment on Article 2(1), the Committee on Economic, Social and Cultural Rights observed that: 'international cooperation ... for the realization of economic, social and cultural rights is an obligation of all States' (GC 3, 1990) and that, in the context of the rights to food and to health, that: 'States have a joint and individual responsibility, in accordance with the Charter of the United Nations, to cooperate in providing disaster relief and humanitarian assistance in times of emergency, including relief to refugees and internally displaced persons'.<sup>37</sup>

The duty to cooperate in the context of the right to development is linked closely to Millennium Development Goal 8 (Develop a Global Partnership for Development)<sup>38</sup> and

is especially important in times of crisis and disaster: 'In times of crisis and in chronic poverty, States must ensure, with the help of international cooperation when necessary, that everyone enjoys economic, social and cultural rights'.<sup>39</sup> The right to development and how to measure implementation was considered by a UN High-level task force, which elaborated a methodology with criteria and indicators to evaluate progress in this area.<sup>40</sup> The approach was 'designed to assess the extent to which States are individually and collectively taking steps to establish, promote and sustain national and international arrangements that create an enabling environment for the realization of the right to development' and explains that: 'the responsibility for the creation of this enabling environment encompasses three main levels: (a) States acting collectively in global and regional partnerships; (b) States acting individually as they adopt and implement policies that affect persons not strictly within their jurisdiction; and (c) States acting individually as they formulate national development policies and programmes affecting persons within their jurisdiction'.<sup>41</sup>

The rules of law that govern the environment continue to develop around the notion of sustainable development (and its primary constituent elements of common but differentiated responsibilities and intergenerational equity) and has extended into economic and social rights and duties, coming together in complementary and competing ways. Considered together, this growing body of multilateral environmental treaties provides a corpus of substantive and procedural rules that elucidate the normative content and practice relevant to the duty to cooperate, providing a foundation for enhanced global solidarity in this field.<sup>42</sup>

33 UN International Covenant on Economic, Social and Cultural Rights (New York, 16 December 1966, entry into force 3 January 1976, in accordance with art 27) UNTS 993 at 3 <http://treaties.un.org/doc/publication/UNTS/Volume%20993/v993.pdf>. See also UN Consultation on the Relationship between Climate Change and Human Rights (Geneva, Switzerland 22 October 2008) Paper by John H Knox 'Climate change as a global threat to human rights' (on file with author).

34 ICESCR art 2(1) provides: 'Each State Party to the present Covenant undertakes to take steps, individually and through international assistance and co-operation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures'. Rights protected under the covenant include, inter alia, the right to an adequate standard of living, 'including adequate food, clothing and housing' (art 11), the right to 'the enjoyment of the highest attainable standard of physical and mental health' (art 12) and the rights to take part in cultural life and to enjoy the benefits of scientific progress (art 15). Each of these provisions is anchored on the duty to cooperate.

35 Knox 'Climate change' (n 33).

36 ICESCR art 23 provides: 'The States Parties to the present Covenant agree that international action for the achievement of the rights recognized in the present Covenant includes such methods as the conclusion of conventions, the adoption of recommendations, the furnishing of technical assistance and the holding of regional meetings and technical meetings for the purpose of consultation and study organized in conjunction with the Governments concerned'.

37 Cited in Knox 'Climate change' (n 33).

38 P Alston 'Ships passing in the night: the current state of the human rights and development debate seen through the lens of the Millennium Development Goals' (August 2005) 27(3) *Human Rights Quarterly* 755–829.

39 Human Rights Council 'Consolidation of findings of the high-level task force on the implementation of the right to development' 15th session (January 2010) UN Doc A/HRC/15/WG.2/TF/2/Add.1 at 5.

40 UN Report of the High-Level Task Force on the Implementation of the Right to development on Its Sixth Session, UN Doc A/HRC/15/WG.2/TF/2/Add.2. The remit of this work was that: 'The Working Group requested the task force to review the structure of the criteria, their coverage of aspects of international cooperation and the methodology for their application with a view to enhancing their effectiveness as a practical tool for evaluating global partnerships, and specifically providing a consistent mapping of the criteria and relevant checklists, viewing the latter as operational sub-criteria. The Working Group saw this process eventually leading to the elaboration and implementation of a comprehensive and coherent set of standards'.

41 *ibid* 8.

42 See for example:

– UN Framework Convention on Climate Change (UNFCCC), which in its preamble provides: '*Acknowledging* that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions ... *Reaffirming* the principle of sovereignty of States in international cooperation to address climate change' and establishes a Conference of the Parties which is to: 'Seek and utilize, where appropriate, the services and cooperation of, and information provided by, competent international organizations and intergovernmental and non-governmental bodies' (art 7(2)) [http://unfccc.int/essential\\_background/convention/background/items/1349.php](http://unfccc.int/essential_background/convention/background/items/1349.php).

However, the tensions between economic interests and the environment, and between national and global wellbeing continue to bubble up, sometimes threatening regional peace and security.<sup>43</sup> In July 2011, the German Government urged the UN Security Council to extend its approach to security to include environmental issues: '... the traditional instruments of security policy alone are no longer suitable for the global problems and challenges of today. Rather, it is now imperative to promote a comprehensive understanding of the security concepts – and thereby also expressly incorporate an ecological component'.<sup>44</sup> At meetings on this topic in 2011, the Security

Council refused to adopt this approach, but noted that threats to the environment could be contextual information in any threat to the peace.<sup>45</sup> Despite this, the matter is a recurring theme, reiterated most recently at this year's UN annual meeting of the GA where, at a side event, Germany called for preventive diplomacy in this area: 'Climate change is a so-called "non-traditional security threat". As complex as this threat appears, we have to develop a new collective approach. ... Climate security is possible with preventive planning for coastal security and with freshwater management. International governance has to be adapted to new circumstances. These are tasks for Foreign Ministers'.<sup>46</sup> The international community appears reticent to support this approach universally, despite support from some national governments.<sup>47</sup> The global community continues to grapple with this topic, discussed in more detail below.

– UN Convention on Biological Diversity (UN CBD), which provides: 'Stressing the importance of, and the need to promote, international, regional and global cooperation among States and intergovernmental organizations and the non-governmental sector for the conservation of biological diversity and the sustainable use of its components' (Preamble); 'Each Contracting Party shall, as far as possible and as appropriate, cooperate with other Contracting Parties, directly or, where appropriate, through competent international organizations, in respect of areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity' (art 5); and 'The Contracting Parties shall, in accordance with national legislation and policies, encourage and develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of this Convention. For this purpose, the Contracting Parties shall also promote cooperation in the training of personnel and exchange of experts' (art 18(4)) <http://www.cbd.int/convention/text/>.

– UN Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (UN CD): 'Recognizing also the importance and necessity of international cooperation and partnership in combating desertification and mitigating the effects of drought' (preamble); 'The objective of this Convention is to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas' (art 2); 'the Parties should, in a spirit of international solidarity and partnership, improve cooperation and coordination at sub regional, regional and international levels, and better focus financial, human, organizational and technical resources where they are needed; the Parties should develop, in a spirit of partnership, cooperation among all levels of government, communities, non-governmental organizations and landholders to establish a better understanding of the nature and value of land and scarce water resources in affected areas and to work towards their sustainable use' (art 3) [http://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg\\_no=XXVII-10&chapter=27&lang=en](http://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-10&chapter=27&lang=en). See also K Wellens 'Revisiting solidarity as a (re-)emerging constitutional principle: some further reflections' in R Wolfrum, C Kojima (eds) 'Solidarity: A Structural Principle of International Law' (2010) 213 *Beiträge zum ausländischen öffentlichen Recht und Völkerrecht* 3; R B Bilder 'International law and natural resources policies' (1980) 20 *Nat Resources J* 451; O Kuik, P Peters and N Schrijver *Joint Implementation to Curb Climate Change: Legal and Economic Aspects* vol 2 (Kluwer Academic Pub 1994); P M Dupuy 'The place and role of unilateralism in contemporary international law' (2000) 11 *European Journal of International Law* 19.

43 A-M Slaughter 'Security, solidarity, and sovereignty' (n 27) 619–31.

44 The Permanent Mission of Germany to the United Nations, New York, Statement of Priorities <http://www.new-york-un.diplo.de/Vertretung/newyorkvn/en/05/environment-and-climate-change.html>.

## Transboundary water resources management as a case study for the duty to cooperate: sovereignty as the grand challenge

### The global water challenge with a focus on transboundary water resources

Water is unlike any other resource; rivers are not privately owned and national governments play a central role in the development and management of the resource.<sup>48</sup> With more than 250 major international rivers, lakes and aquifers that cross sovereign borders, the opportunities for exploring the normative content of the duty to cooperate in this field is evident. This part provides an overview of the global water challenge, focusing primarily on transboundary (state-state) water resources.

The literature in this field is vast and cuts across disciplinary expertise exploring the conflict/cooperation

45 Several delegations recommended that climate change should be dealt with under the UN Framework Convention on Climate Change and that the Security Council should stick to more mainstream peace and security issues. See unofficial record at <http://www.un.org/News/Press/docs/2011/sc10332.doc.htm>.

46 German-Moroccan Side Event 'Climate change: challenge for preventive diplomacy' [http://www.new-york-un.diplo.de/Vertretung/newyorkvn/en/\\_pr/speeches-statements/2012/20120928-westerwelle-climate-change-sideevent.html?archive=2984656](http://www.new-york-un.diplo.de/Vertretung/newyorkvn/en/_pr/speeches-statements/2012/20120928-westerwelle-climate-change-sideevent.html?archive=2984656).

47 Germany continues to push the issue. The UK had presented a concept note on the topic to the Security Council in 2007; see Annex to the letter dated 5 April 2007 from the Permanent Representative of the United Kingdom of Great Britain and Northern Ireland to the United Nations addressed to the President of the Security Council, Energy, Security and Climate <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N07/297/71/PDF/N0729771.pdf?OpenElement>.

48 Eyal Benvenisti 'Collective action in the utilization of shared freshwater: the challenges of international water resources law' (1996) 90 *American Journal of International Law* 384.

paradigm in this field. Recent studies provide evidence of existing and even more water insecurity within the foreseeable future.<sup>49</sup> Other studies, such as the IPCC,<sup>50</sup> and reports by the UN,<sup>51</sup> the World Bank,<sup>52</sup> the World Economic Forum<sup>53</sup> and the private and public sector, such as national governments, concerned with the national security aspects, are studying this area with increasing intensity. The US Intelligence Community Report issues this 'bottom line':

During the next 10 years, many countries important to the United States will experience water problems – shortages, poor water quality, or floods – that will risk instability and state failure, increase regional tensions, and distract them from working with the United States on important US policy objectives. Between now and 2040, fresh water availability will not keep up with demand absent more effective management of water resources. Water problems will hinder the ability of key countries to produce food and generate energy, posing a risk to global food markets and hobbling economic growth. As a result of demographic and economic development pressures, North Africa, the Middle East, and South Asia will face major challenges coping with water problems.<sup>54</sup>

It has been suggested that conflicts over water occur over three key issues: quality; quantity; timing.<sup>55</sup>

However, water can be a catalyst for peace<sup>56</sup> – a recent report by the World Bank considered cooperation on water as a mechanism for preventing conflict: 'Regional cooperation is widely accepted as a process and instrument for preventing conflict, promoting economic growth, and facilitating country integration within the region and with the international community'.<sup>57</sup> The report cites an example of the benefits from regional cooperation in Central Asia.<sup>58</sup> However, despite this, cooperation in the region has been declining with challenges in each of the areas that a World Bank panel considered as essential design features of successful programmes: (i) strong country commitment to regional cooperation; (ii) objectives that match national and regional capacities; (iii) clear definition and coordination of the roles of national and regional institutions; (iv) accountable governance arrangements; and (v) plans for the sustainability of program outcomes.<sup>59</sup>

The report calls for increased, indeed 'urgent' attention and action to enhance efforts at regional cooperation in Central Asia through a flexible operational framework that could build at least ad hoc advances.<sup>60</sup> The message is the same for other regional watercourse regimes:

49 Maplecroft, a corporate risk intelligence firm released a Water Security Risk Index listing the following as countries with the least secure supplies of water (in order of highest water insecurity): Somalia, Mauritania, Sudan, Niger, Iraq, Uzbekistan, Pakistan, Egypt, Turkmenistan and Syria <http://maplecroft.com/about/news/water-security.html>. See also 2030 Water Resources Group 'Charting our water future' (n 9): 'The report offers case studies from four countries with drastically different water issues, which will collectively account for 40 percent of the world's population, 30 percent of global GDP and 42 percent of projected water demand in 2030: China, India, South Africa and Brazil' [http://www.mckinsey.com/client\\_service/sustainability/latest\\_thinking/charting\\_our\\_water\\_future](http://www.mckinsey.com/client_service/sustainability/latest_thinking/charting_our_water_future).

50 B C Bates, Z W Kundzewicz, S Wu and J P Palutikof (eds) *Climate Change and Water: Technical Paper of the Intergovernmental Panel on Climate Change* (IPCC Secretariat Geneva 2008).

51 'Addressing an urgent security issue' (with a foreword by Gro Harlem Brundtland) UNU-INWEH (2012) [http://www.inweh.unu.edu/WaterSecurity/documents/WaterSecurity\\_FINAL\\_Aug2012.pdf](http://www.inweh.unu.edu/WaterSecurity/documents/WaterSecurity_FINAL_Aug2012.pdf); UN World Water Assessment Programme *The United Nations World Water Development Report 3: Water in a Changing World* (UNESCO Paris and London 2009) Earthscan <http://www.unesco.org/water/wwap/wwdr/wwdr3>.

52 World Bank Development Report 'Conflict, security, and development' (n 8).

53 World Economic Forum Water Initiative *Water Security: Managing at the Water-Food-Energy-Climate Nexus* (Island Press Washington DC 2010) 13. See also Ban Ki-moon 'Water is our most precious natural resource' Message on World Water Day (22 March 2009) UNIS/SGSM/100 <http://www.unis.unvienna.org/unis/pressrels/2009/unisssgm100.html> at 20. November 2010.

54 US Intelligence Community Report [http://www.dni.gov/files/documents/Special%20Report\\_ICA%20Global%20Water%20Security.pdf](http://www.dni.gov/files/documents/Special%20Report_ICA%20Global%20Water%20Security.pdf). The report 'focused on a finite number of states that are strategically important to the United States and transboundary issues from a selected set of water basins (Nile, Tigris-Euphrates, Mekong, Jordan, Indus, Brahmaputra, and Amu Darya). We judge that these examples are sufficient to illustrate the intersections between water challenges and US national security'.

55 Annika Kramer, Aaron T Wolf, Alexander Carius and Geoffrey D Dabelko 'The key to managing conflict and cooperation over water' (January–March 2013) 11(1) *UNESCO A World of Science* 5, where they list examples of conflicts <http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SC/pdf/219156E.pdf>.

56 *ibid* 4–12; see also [http://www.un.org/waterforlifedecade/water\\_cooperation.shtml](http://www.un.org/waterforlifedecade/water_cooperation.shtml).

57 World Bank Development Report 'Conflict, security, and development' (n 8) 236.

58 *ibid*: 'Two international studies have estimated that improved regional cooperation could increase Central Asia's regional GDP by between 50 and 100 per cent – and regional per capita incomes by up to 100 per cent – in about 10 years. Lower transport costs would increase trade with large neighbors such as China, the Islamic Republic of Iran, the Russian Federation, and, indirectly, South Asia. Managing and exploiting transboundary water, irrigated agriculture, and related hydro and other energy resources would be more cost-effective. And collaborative approaches to regional public goods, such as biodiversity, the environment, and public health, would benefit from economies of scale – as would enhancing security, managing natural disasters, and curbing the drug trade'.  
59 *ibid* 239.

60 *ibid*: 'The need for closer cooperation in Central Asia – to prevent conflict and to maintain and reinforce regional stability – may be greater and more urgent than ever, especially in energy and water, and trade and transport, which have so far proven intractable. While the outlook for enhanced cooperation may have worsened, this makes renewed focus and coordinated effort by external actors all the more important. In this context, the Central Asia Regional Economic Cooperation program's pragmatic emphasis on coordinated country specific investments in energy and transport infrastructure benefiting two or more countries may be a model for other partners to follow. If cooperation is indeed more likely to be ad hoc and in narrowly defined areas of common interest or concern – not involving all five countries – a flexible operational framework, rather than an elaborate regional plan or strategy, is the right way to shape external actors' actions. External actors can do much in convening, mediating, and resolving issues, but without mutual interest and political will in the countries, their role will be limited'.

Ahead of potential new impacts from climate change, international support could be provided to sub regions where fragile countries share river boundaries. Depending on the circumstances, this effort could encompass a shift from agreements based on precise volume to agreements based on percentages, to account for the potential impact of reduced flow, and to agreements based on sharing the benefits from expanded development of river basins that benefit all riparians, as well as new agreements where none exist. Efforts to foster cross-border or sub-regional water management arrangements can ease regional tensions even if climate impacts do not end up affecting flow rates.<sup>61</sup>

International organisations and policy forums offer additional insights on the nature of the global water challenge. The duty to cooperate in transboundary waters was presented as a vital theme at the Rio+20 Summit, where the overall objectives of this huge meeting were threefold: (i) to secure renewed political commitment for sustainable development; (ii) to assess the progress to date and identify gaps in implementation on sustainable development; and (iii) to provide a roadmap to address existing gaps and to tackle new and emerging challenges.<sup>62</sup> In the build-up to the conference, the transboundary water community pressed its case; as one example, the European Parliament highlighted 'the importance of integrated river basin management' and called for 'cross-border cooperation in transboundary river basins'.<sup>63</sup> In its joint communication the European Commission called for renewed commitment to promote sustainable water, which 'could be achieved by establishing international partnerships on water. ... International river basin management also needs to be addressed, in particular within transboundary river commissions'.<sup>64</sup>

However, despite many calls for Rio to include transboundary water cooperation,<sup>65</sup> the final document,

*The Future We Want*, is a step backwards from 20 years earlier, where that document expressly noted that: 'Transboundary water resources and their use are of great importance to riparian states. In this connection, cooperation among those states may be desirable in conformity with existing agreements and/or other relevant arrangements, taking into account the interests of all riparian states concerned'.<sup>66</sup>

### Sovereignty over water and the paradox of water security

*They will switch the Indus off to make Pakistan solely dependent on India. It's going to be a water bomb.*<sup>67</sup>

Bashir Ahmad in *The Economist* 2011

*Water should be a priority in every nation's foreign policy and domestic agenda, and we need to work together to advance cooperation on shared waters.*<sup>68</sup>

Hillary Clinton, US Secretary of State, 2012

National governments are directly interested in securing access to water, especially those freshwaters located on, or crossing through, their territory. While international rivers, lakes and aquifers and their ecosystems transcend national boundaries, nation states, under the guise of sovereignty and self-interest lay claim to exclusive rights of development and management in support of national economies. The theory of 'limited territorial sovereignty', now the prevailing approach in this area, has reigned in claims of 'absolute sovereignty',<sup>69</sup> the position generally asserted by upstream states. Nonetheless, claims of national

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the transboundary surface and ground water resources are only possible if riparian states cooperate in line with internationally agreed principles. Transboundary water resources present an opportunity for collaboration rather than a source of conflict and a constraint for development. Thus, in order to harness sustainable benefits of transboundary water resources for all riparian countries, joint efforts need to be made. However, this necessitates first the willingness to cooperate which can only come out through extensive dialogue, mutual trust and understanding among riparian states'.

66 Agenda 21 ch 18(4).

67 Bashir Ahmad '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>.

68 US Secretary of State Hillary Clinton at UN Roundtable on Water Security (New York, 25 September 2012) <http://www.state.gov/secretary/rm/2012/09/198179.htm>.

69 The theory of absolute territorial sovereignty holds that a state, as a sovereign, enjoys full control over all resources contained within its boundaries, including, *ipso facto*, water. Often referred to as the 'Harmon doctrine', after the US Attorney-General whose legal opinion effectively denied Mexico any guaranteed future use of the waters of the Rio Grande, this theory is generally favoured by upstream states, which control the 'tap' of the resource. Brazil, Canada, Ethiopia, India, Turkey and the United States have each referred to the Harmon doctrine in support of their positions regarding watercourse development at various points in time. Despite this, the theory has never been universally endorsed as a basis for a riparian state's legal entitlement to use the waters of an international watercourse.

61 *ibid* 286. However, this proposed cooperation may not address fully the range of attendant environmental considerations – while human populations might enjoy enhanced hydro-electric power, what provision is made for habitat or biodiversity needs?

62 United Nations Conference on Sustainable Development (UNCSD) About Rio+20 (June 2012) <http://www.uncsd2012.org/rio20/index.php?menu=17>.

63 European Parliament 'European Parliament Resolution of 29 September 2011 on developing a common EU position ahead of the United Nations Conference on Sustainable Development (Rio+20)' (2011).

64 European Commission 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Rio+20: towards the green economy and better governance' (2011).

65 World Water Council '5th World Water Forum: bridging divides over water' (2009) [http://www.worldwatercouncil.org/fileadmin/www/World\\_Water\\_Forum/WWF5/global\\_water\\_frameworking\\_part\\_1\\_final.pdf](http://www.worldwatercouncil.org/fileadmin/www/World_Water_Forum/WWF5/global_water_frameworking_part_1_final.pdf). The World Water Forum provided that: 'Improved understanding and strengthened cooperation in the transboundary context [is necessary]. Optimal utilization and effective protection of

sovereignty are often invoked to defend unilateral actions on shared transboundary water resources, generally with adverse impacts downstream.

The concept of water security has attracted considerable attention over the past decade and continues to be the subject of debate and discourse.<sup>70</sup> From an international legal perspective the notion deals with the issues clustered around three core challenges: (i) availability; (ii) access; and (iii) addressing conflicts-of-use, ie where there is inadequate access to appropriately available and suitable quantities and quality of water to meet reasonable needs; this can apply at a range of scales – local, national, regional and global. While various definitions of water security have been offered, common to each is the notion that competing demands and supplies need to be balanced, and an integral part of the process achieving this is the notion of equity, considered in its broadest sense, ie to ensure freedom from want and in ways that promote the fundamental freedoms of all,<sup>71</sup> including ecosystems.<sup>72</sup>

The current and future challenge is how to ensure the peaceful development and management of the world's shared water resources in times of increasing insecurities, all linked in some way to water:<sup>73</sup> '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'.<sup>74</sup> Paradoxically, it is the tension of interdependence that strains the bounds

of sovereignty; in this context it is interesting to note the strong call for cooperation over water, now repeated in high-level global policy fora.

At a recent UN Round Table on Water Security convened in New York, the chair Under-Secretary Otero summarised the outcomes of the discussion:

- (i) cooperation and collaboration as essential to advancing work in this area and to finding responses to water security challenges at the local, regional and global levels
- (ii) the broad range of institutions required to deal with water and the need to build bridges across these
- (iii) prioritising water at national and international levels; to stop talking and to start doing
- (iv) the need for more teaching, training, capacity enhancement at the country and regional level and a more coordinated engagement of the public and private sectors.

US Secretary of State Hillary Clinton addressed the group and emphasised the importance of water: 'I think water should be a priority in every nation's foreign policy and domestic agenda, and we need to work together to advance cooperation on shared waters'.<sup>75</sup> It is a view shared by former heads of state. The InterAction Council, which studied this topic at its recent annual meeting in 2011 called for '[p]lacing water at the forefront of the global political agenda and linking climate change research and adaptation programs to water issues'.<sup>76</sup> The council reiterated its call for the UN Security Council to make water a top priority: 'The future political impact of water scarcity may be devastating', says former Canadian Prime Minister and IAC co-chair Jean Chrétien: 'Using water the way we have in the past simply will not sustain humanity in future. The IAC is calling on the United Nations Security Council to recognize water as one of the top security concerns facing the global community'.<sup>77</sup> This water-related approach aligns snugly with the German proposal to the Security Council on environmental security (discussed above).

70 C Leeb, P Wouters '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 and others (eds) *Water Security: Principles, Perspectives and Practices* (Earthscan Publications London 2013). See also Benvenisti 'Shared freshwater' (n 48); J Brunnée, S J Toope 'Environmental security and freshwater resources: a case for international ecosystem law' (1994) 5 *Yearbook of International Environmental Law* 41.

71 See United Nations 'A more secure world: our shared responsibility' (n 26) 77. See also 'In larger freedom' (n 24).

72 P Wouters, S Vinogradov and B O Magsig (2009) 'Water security, hydrosolidarity, and international law: a river runs through it ...' (2009) 19 *Yearbook of International Environmental Law* 97–134.

73 Benvenisti 'Shared freshwater' (n 48) 21 states: 'Collective action in the utilization of transboundary resources can, in principle, provide optimal and sustainable results. A bleak future of wars over control of water resources is not an unavoidable tragedy in our new millennium. Despite ominous predictions of global warming and population explosion, the problem in most cases is not insufficient supplies, but regulating the conflicting demands'.

74 E Brown Weiss 'The coming water crisis: a common concern of humankind' (2012) 1(1) *Transnational Environmental Law* 153–68 at 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' (2011) *Journal of International Law* 315 at 325

<http://www.wzb.eu/sites/default/files/veranstaltungen/eyalbenvenistisovereignstrusteesofhumanityjuly3rd2012.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'.

75 Full speech <http://www.individual.com/storyrss.php?story=163955447&hash=a5a8213efed4c4abc50c38ec7efb6ff6>.

76 InterAction Council Final Communiqué, 29th Annual Plenary Meeting (29–31 May 2011) Québec City, Canada <http://interactioncouncil.org/final-communicu-42>.

77 'World confronts serious water crisis, former heads of government and experts warn in new report' (September 2012) <http://www.interactioncouncil.org/world-confronts-serious-water-crisis-former-heads-government-and-experts-warn-new-report>.

## Overview of the rules of international law that govern transboundary water resources

Numerous studies have reviewed the evolution of the rules of international law governing shared fresh waters (international water law).<sup>78</sup> The role of the International Law Commission (ILC) under the United Nations umbrella<sup>79</sup> and the contribution of the International Law Association (ILA) (Helsinki Rules)<sup>80</sup> and the *Institut de droit international* (Salzburg Rules)<sup>81</sup> in the codification and progressive development of the law in this area must be acknowledged and provides the background for this study. The Helsinki Rules are still referred to today, and contain an extensive collection of substantive and procedural rules covering the uses of shared waters.<sup>82</sup>

Especially over the past 50 years, international water law has evolved from concerns with navigation and commerce into issues involving national economies and security.<sup>83</sup> The link between national prosperity, the

wellbeing of human and ecosystem populations,<sup>84</sup> meeting basic social and environmental needs and the provision of adequate quality and quantity of water and sanitation has been established in numerous studies and reports.<sup>85</sup> What is less clear is the role of international law in this regard. Thus, the Dublin Principles<sup>86</sup> and the fundamental water-related provisions of Rio 1992,<sup>87</sup> now being revisited in Rio + 20,<sup>88</sup> must be part of this discussion as we go forward (discussed elsewhere).

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.<sup>89</sup>

*Part 2 of this article will follow in the next issue of Environmental Liability ([2013] Env. Liability 4)*

78 S C McCaffrey *The Law of International Watercourses* (2nd edn Oxford University Press Oxford 2007). See also P Wouters 'International watercourses' in Oxford Bibliographies Online: International Law <http://www.oxfordbibliographies.com/view/document/obo-9780199796953/obo-9780199796953-0064.xml>.

79 International Law Commission 'Resolution on confined transboundary groundwater' (1994) 2 *Yearbook of the International Law Commission* 135 UN Doc A/CN.4/SER.A/1994/Add.1 [http://untreaty.un.org/ilc/publications/yearbooks/Ybkvolumes%28e%29/ILC\\_1994\\_v2\\_p2\\_e.pdf](http://untreaty.un.org/ilc/publications/yearbooks/Ybkvolumes%28e%29/ILC_1994_v2_p2_e.pdf).

80 Helsinki Rules on the Uses of International Rivers, adopted by the ILA at the 52nd Conference (Helsinki, August 1966) reprinted in S Bogdanović *International Law of Water Resources: Contribution of the International Law Association (1954–2000)* (Kluwer Law International The Hague 2001); C B Bourne 'The International Law Association's contribution to international water resources law' in *International Water Law: Selected Writings of Professor Charles B Bourne* (Kluwer Law International The Hague 1997) 233–83.

81 Resolution on the Utilization of Non-maritime International Waters (except for Navigation) adopted by the Institute of International Law at its Session at Salzburg (4–13 September 1961) reprinted in (1961) 49(II) *Annuaire de l'Institut de droit international*.

82 Salman MA Salman 'The Helsinki Rules, the IUN Watercourses Convention and the Berlin Rules: perspectives on international water law' (2007) 23(4) *Water Resources Development* 625–40.

83 P Wouters 'International watercourses' (n 78).

84 Ecosystem Millennium Assessment Report *Synthesis Report: Ecosystems and Human Well-being* (Island Press Washington DC 2010).

85 UNDP World Bank annual development reports; MDG annual report on water?

86 Dublin Statement on Water and Sustainable Development (31 January 1992) Dublin, Ireland, reprinted in (1992) 22 *Environmental Policy & Law* 54.

87 Agenda 21: 'A programme for action for sustainable development' (13 June 1992) Rio de Janeiro, Brazil in Report of the United Nations Conference on Environment and Development Annex II (1992) UN Doc A/Conf.151/26 (vol II) [http://www.un.org/esa/dsd/agenda21/res\\_agenda21\\_18.shtml](http://www.un.org/esa/dsd/agenda21/res_agenda21_18.shtml).

88 Rio+20 'Water in a green economy' (n 14).

89 Edith Brown Weiss *The Evolution of International Water Law* (2007) 331 Hague Academy of International Law *Recueil de cours* 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.