

ARTICLE

The Impact of a Human Right to Water on the Sustainable Balance of Water Uses under the UN Watercourses Convention

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This article sets the global scene for the regional and local levels elaborated upon by articles later in this special issue by addressing the following research question: What is the impact of a human right to water on the sustainable balance of water uses under the customary international water law principle of equitable and reasonable utilization as codified in the UN Watercourses Convention? In order to answer this question, first, both a human right to water and vital human needs are introduced. Second, the position of a human right to water under the UN Watercourses Convention is reviewed, focusing on vital human needs that require special regard in order to reach equitable and reasonable utilization of freshwater resources. Third, various water uses to be taken into account when aiming for a sustainable balance are considered. Finally, the shift in balance by the coming into existence of a human right to water is concluded upon: It is argued that the impact of the human right to water results in effective priority of water uses for vital human needs in the application of the principle of equitable and reasonable utilization of international watercourses, reinforcing the human right to water beyond borders in return. This article contributes to the legal discourse by linking the general principles of international water law to the human right to water, which are foremost dealt with separately in existing literature, and clarifies the position of this right in the balance of water uses in cases of transboundary water allocation.

Keywords: human right to water; international water law; UN Watercourses Convention; the principle of equitable and reasonable utilization; vital human needs; sustainable balance of water uses

1. Introduction

Various freshwater uses compete and potentially conflict, globally, regionally and locally.¹ Scarcity of adequate freshwater resources available to humankind has resulted in a world water crisis exacerbated by climate change.² An estimated 785 million people lack access to basic drinking water services.³ Freshwater resources make up only around 2.5% of the world's waters. Almost 70% of the fresh water is frozen in icecaps and glaciers and only an estimated 0.3% of the freshwater resources is more readily accessible for human use, of which the largest part is contained in groundwater.⁴ Human withdrawal and pollution of

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¹ A Hildering, *International law, sustainable development and water management* (Eburon 2004).

² <<https://www.unwater.org/water-facts/climate-change/>> accessed 9 January 2020.

³ *UN The Sustainable Development Goals Report 2019*, 34: 785 million people lacked basic drinking water services in 2017. According to the *UN Sustainable Development Goal 6 Synthesis Report on Water and Sanitation 2018*, 11, 844 million people lack basic water service.

⁴ P Gleick (edn.), *2018 The World's Water, Volume 9* (Pacific Institute 2018). On total renewable freshwater supply by country; see P Gleick, W Burns, E Chalecki, M Cohen, K Kao Cushing, A Mann, R Reyes, G Wolff, A Wong, *The World's Water 2002–2003: The biennial report on freshwater resources* (Island Press 2002) 237–242; Table 1. See World Water Assessment Programme, *The United Nations World Water Development Report 2019 Leaving No One Behind* (UNWDDR), 18; Figure 6 on global and regional drinking water coverage.

fresh water pose further threats to the availability of adequate freshwater resources.⁵ Much of the available water resources are part of international watercourses. According to Article 2 of the 1997 UN Convention on the Law of the Non-navigational Uses of International Watercourses (UN Watercourses Convention):

- (a) 'Watercourse' means a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus;
- (b) 'International watercourse' means a watercourse, parts of which are situated in different States;⁶

There are 286 international rivers and 592 transboundary aquifers shared by 153 countries.⁷ Water conflicts nowadays often relate to multiple competing water uses and interests between users in multiple states, also involving non-state actors that may cooperate across borders.⁸

The core principle of equitable and reasonable utilization (Article 5–6 UN Watercourses Convention) together with the no-harm principle (Article 7 UN Watercourses Convention) and the principle of cooperation (Article 8–9 UN Watercourses Convention) are the main principles of international water law and reflect customary international law.⁹ The no-harm principle can be reconciled with equitable and reasonable utilization by a shift in the burden of evidence in the case of significant or irreversible harm, while the duty to cooperate can be viewed as facilitating the implementation of the former two principles.¹⁰

The principle of equitable and reasonable utilization of international watercourses as laid down in the UN Watercourses Convention, Article 5 Equitable and reasonable utilisation and participation, states:

1. Watercourse States shall in their respective territories utilise an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilisation thereof and benefits therefrom taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse.
2. Watercourse States shall participate in the use, development and protection of an international watercourse in an equitable and reasonable manner. Such participation includes both the right to utilise the watercourse and the duty to cooperate in the protection and development thereof, as provided in the present Convention.¹¹

It requires a case-by-case balancing of involved interests as elaborated upon in Article 6. The weight of the interests relating to various uses of water may differ per situation.

When using freshwater resources for the fulfilment of a human right to water, it will often have to compete with other uses such as for industry or to retain wetlands. Under international water law, no water use is granted inherent priority. Special regard to vital human needs is required though to reach equitable and reasonable utilization of water resources. The position of water uses for vital human needs has long been viewed as ambiguous due to the lack of inherent priority while granting special regard. The coming into

⁵ According to the UNWWDR 2019 (n 4) 13, global water use increased about 1% per year since the 1980s.

⁶ United Nations Convention on the Law of Non-Navigational Uses of International Watercourses [1997] UN Doc. A/RES/51229, entry into force 17 August 2014, status as at 15 June 2020: 16 Signatories and 36 Parties, <<https://treaties.un.org>> accessed 15 June 2020. See, e.g., G Eckstein, 'The status of the UN Watercourses Convention: does it still hold water?' (2020) 36 International Journal of Water Resources Development 2–3.

⁷ See UNWWDR (n 4) 17.

⁸ E Brown Weiss, *International Law for a Water-Scarce World* (Brill 2013) 123, groups freshwater disputes into: 'boundary disputes; disputes over development of water resources, their allocation and their use; water quality disputes; and ecosystem protection disputes.'

⁹ See, e.g., ICJ *Gabčíkovo-Nagymaros Project* (Hungary/Slovakia) Judgment of 25 September 1997, para 78, referring to an equitable and reasonable sharing of the resources of an international watercourse as a basic right; ICJ *Certain Activities carried out by Nicaragua in the Border Area (Costa Rica v. Nicaragua) and Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)* Judgment of 16 December 2015, para 104, on the customary status of the no-significant-harm principle. See also SC McCaffrey, *The Law of International Watercourses: Non-navigational uses* (OUP 2001) 345; E Brown Weiss 2013 (n 8) 111; O McIntyre and M Tignino, 'Reconciling the UN Watercourses Convention with recent developments in customary international law' in F Rocha Loures and A Rieu-Clarke (eds), *The UN Watercourses Convention in Force. Strengthening international law for transboundary water management* (Routledge 2013) 286–302.

¹⁰ A Tanzi and M Arcari, *The United Nations Convention on the Law of International Watercourses* (Kluwer Law International 2001) 179; A Hildering 2004a (n 1) 53–54.

¹¹ UN Watercourses Convention (n 6) art 5. See on international water law, e.g., SC McCaffrey, 'The progressive development of international water law' in F Rocha Loures and A Rieu-Clarke (eds), *The UN Watercourses Convention in Force. Strengthening international law for transboundary water management* (Routledge 2013) 10–19.

existence of a human right to water may have an impact on the balance to be struck between the competing water uses and help clarify the position of vital human needs.

Sustainable development may also require adjustment of the potential outcomes of the weighing process. The UN General Assembly proclaimed 22 March (World Water Day) 2018–2028 as International Decade for Action, ‘Water for Sustainable Development.’¹² Sustainable Development Goal 6 aims to ‘Ensure availability and sustainable management of water and sanitation for all.’¹³ This will require a sustainable balance of social, economic and ecological uses of freshwater resources.

The research question of this article is: What is the impact of a human right to water on the sustainable balance of water uses under the customary international water law principle of equitable and reasonable utilization as codified in the UN Watercourses Convention?

In order to answer this question, first, both a human right to water and vital human needs are introduced. Second, the position of a human right to water under the UN Watercourses Convention is reviewed, focusing on vital human needs that require special regard in order to reach equitable and reasonable utilization of freshwater resources (Article 10). Third, various water uses to be taken into account when aiming for a sustainable balance are considered. Finally, the shift in balance by the coming into existence of a human right to water is concluded upon. By linking the general principles of international water law to the human right to water and clarifying its position in cases of transboundary water allocation, this article contributes to the legal discourse and sets the global scene for this special issue.

2. A Human Right to Water for Vital Human Needs

In order to provide an idea of the two key concepts of this article and how they relate, first, the development and legal status of a human right to water is introduced.¹⁴ Second, the position of vital human needs under the UN Watercourses Convention is introduced.

2.1. A human right to water

Though a right to water was often acknowledged as a condition for the fulfilment of other human rights, a *human right to water* used to be highly debated.¹⁵ At the start of the 21st century, a *free-standing human right to water* increasingly gained support and recognition.¹⁶ General Comment 15 (2002) of the Committee on Economic, Social and Cultural Rights (CESCR) can be considered the turning point in favour of a human right to water:

The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses. An adequate amount of safe water is necessary to prevent death from dehydration, to reduce the risk of water-related disease and to provide for consumption, cooking, personal and domestic hygienic requirements.¹⁷

¹² UNGA A/RES/71/222 *International Decade for Action, “Water for Sustainable Development”, 2018–2028* [2016]. In this resolution, the UNGA: recalled its resolution on the human right to water; reaffirmed the sustainable development goals; emphasized the link between water, energy, food security and nutrition; expressed its concern with problems being exacerbated by urbanization and climate change as well as with ecosystems; decided that the objectives of the Decade ‘should be a greater focus on the sustainable development and integrated management of water resources in order to help to achieve internationally agreed water-related goals and targets, including those contained in the 2030 Agenda for Sustainable Development;’ highlighted promotion of ‘efficient water usage at all levels, taking into account the water, food, energy, environment nexus;’ and encouraged various actors to contribute to the Decade ‘in order to support the implementation of the 2030 Agenda for Sustainable Development.’

¹³ UNGA A/RES/70/1 *Transforming our world: the 2030 Agenda for Sustainable Development* [2015], Sustainable Development Goals, 249.

¹⁴ See for a further elaboration on the human right to water O Spijkers ‘The sustainable human right to water as reflected in the SDG’s’ in this special issue.

¹⁵ A key article to the discussion at the time was PH Gleick, ‘The human right to water’ (1998) 1 *Water Policy* 487. See also, e.g., A Hildering, ‘The Right of Access to Freshwater Resources’ in N Schrijver and F Weiss (eds), *International Law and Sustainable Development. Principles and Practice* (Martinus Nijhoff 2004) 405; A Cahill, ‘The human right to water – a right of unique status: the legal status and normative content of the right to water’ (2005) 9 *The International Journal of Human Rights* 389.

¹⁶ See, e.g., P Gerber and B Chen, ‘Recognition of the Human Right to Water. Has the tide turned?’ 36 21 (2011) *Alternative L.J.* 21 (2011) 21; J Gupta, A Hildering and D Misiedjan, ‘Indigenous people’s right to water under international law: A legal pluralism perspective’ (2014) 11 *COSUST26*; SC McCaffrey, ‘International Water Cooperation in the 21st Century: Recent Developments in the Law of International Watercourses’ (2014) 23 *RECIEL* 4; P Obani and J Gupta, ‘The Evolution of the Right to Water and Sanitation: Differentiating the Implications’ (2015) 24 *RECIEL* 27.

¹⁷ Committee on Economic, Social and Cultural Rights, E/C.12/2002/11, General Comment No. 15 (2002) *The right to water (arts. 11 and 12 of the International Covenant on Economic, Social and Cultural Rights)*, para 2. See also, e.g., WHO, *Water for health enshrined as a human right* (November 2002); UNDP, *Water: A human right*, Human Development Report, 2006; UNHRC, *Report of the Independent Expert on the Issue of Human Rights Obligations Related to Access to Safe Drinking Water and Sanitation*, UN Doc. A/HRC/12/24 (2009).

This Comment 15, based on Articles 11 and 12 ICESCR, constituted the first recognition by a UN organ of a generally applicable independent human right to water.¹⁸ Though CESCR General Comments are legally non-binding, they provide a highly authoritative interpretation of the ICESCR that also needs to be taken into account by State Parties in their reports.

The recognition in 2010 by the United Nations General Assembly (UNGA) of 'the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights' is considered another milestone.¹⁹ According to the UN:

The Assembly recognized the right of every human being to have access to enough water for personal and domestic uses, meaning between 50 and 100 litres of water per person per day. The water must be safe, acceptable and affordable. The water costs should not exceed 3 per cent of household income. Moreover, the water source has to be within 1,000 metres of the home and collection time should not exceed 30 minutes.²⁰

Since the start of the 21st century, a human right to water has become increasingly acknowledged.²¹ Though its definition and substance remain somewhat debated, the emergence of a self-standing human right to water has since appeared irreversible.²² Currently, considering the increased support of international organizations, endorsement by States and subsequent state practice, a free-standing human right to water has become part of international law.²³ The human right requirement of progressive implementation according to available means entailed by the ICESCR is an obligation of effort rather than result, similar to the obligation of States to 'take all appropriate measures' in preventing and addressing significant harm.²⁴

2.2. Vital human needs

The human right to water as referred to in General Comment 15 strongly coincides with the 'vital human needs' referred to under the UN Watercourses Convention.²⁵ Article 10 of the UN Watercourses Convention states:

1. In the absence of agreement or custom to the contrary, no use of an international watercourse enjoys inherent priority over other uses.
2. In the event of a conflict between uses of an international watercourse, it shall be resolved with reference to Articles 5 to 7, with special regard being given to the requirements of vital human needs.²⁶

According to Article 10(2), competing water uses are to be solved in line with Articles 5 to 7: the principle of equitable and reasonable utilization and the principle not to cause significant harm. The UN Watercourses Convention, Article 6 Factors relevant to equitable and reasonable utilisation, contains a non-exhaustive list of factors relevant to determining equitable and reasonable utilisation:

¹⁸ SC McCaffrey, 'The Human Right to Water' in E Brown Weiss, L Boisson de Chazournes and N Bernasconi-Ostwalder (eds), *Fresh Water and International Economic Law* (OUP 2005) 101.

¹⁹ UNGA Resolution A/RES/64/292 *The human right to water and sanitation* [2010] para 1.

²⁰ <<http://www.un.org/en/sections/issues-depth/water/>> accessed 9 January 2020.

²¹ Gleick 1998 (n 15) 487–503; Hilderling 2004b (n 15) 405–429; Cahill 2005 (n 15) 389–410; Gerber and Chen 2011 (n 16) 21–26; Gupta, Hilderling and Misiedjan 2014 (n 16); McCaffrey 2014 (n 16) 9–11; Obani and Gupta 2015 (n 16) 27–39.

²² SC McCaffrey 2014 (n 16) 9–11.

²³ See on relevant international resolutions and declarations, Amnesty International and WASH United, *Recognition of the human rights to water and sanitation by UN Member States at the international level. An overview of resolutions and declarations that recognise the human rights to water and sanitation* (Amnesty International and WASH United 2014) 9–32 and 33–118 on state positions, <<https://www.amnesty.org/download/Documents/IOR4013802015ENGLISH.PDF>> accessed 9 January 2020.

²⁴ International Covenant on Economic, Social and Cultural Rights, adopted by UNGA resolution 2200 A (XXI), New York, 16 December 1966, entry into force on 3 January 1976. International Covenant on Civil and Political Rights, adopted by UNGA resolution 2200 A (XXI), New York, 16 December 1966, entry into force on 23 March 1976. ICJ *Costa Rica Judgment* 2015 (n 9), para 104: 'As the Court has had occasion to emphasize in its Judgment in the case concerning Pulp Mills on the River Uruguay (Argentina v. Uruguay): "the principle of prevention, as a customary rule, has its origins in the due diligence that is required of a State in its territory. It is 'every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States' (Corfu Channel (United Kingdom v. Albania), Merits, Judgment, I.C.J. Reports 1949, 22). A State is thus obliged to use all the means at its disposal in order to avoid activities which take place in its territory, or in any area under its jurisdiction, causing significant damage to the environment of another State.'" (Judgment, I.C.J. Reports 2010(I), para 101, 55–56.)'

²⁵ Cf. McCaffrey 2005 (n 18) 100–101.

²⁶ UN Watercourses Convention (n 6) Article 10.

1. Utilisation of an international watercourse in an equitable and reasonable manner within the meaning of Article 5 requires taking into account all relevant factors and circumstances, including:
 - (a) Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;
 - (b) The social and economic needs of the watercourse States concerned;
 - (c) The population dependent on the watercourse in each watercourse State;
 - (d) The effects of the use or uses of the watercourses in one watercourse State on other watercourse States;
 - (e) Existing and potential uses of the watercourse;
 - (f) Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect;
 - (g) The availability of alternatives, of comparable value, to a particular planned or existing use.
2. In the application of Article 5 or paragraph 1 of this article, watercourse States concerned shall, when the need arises, enter into consultations in a spirit of cooperation.
3. The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is a reasonable and equitable use, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.²⁷

On article 10(2) UN Watercourses Convention, the Statement of Understanding explains that ‘in determining “vital human needs”, special attention is to be paid to providing sufficient water to sustain human life, including both drinking water and water required for production of food in order to prevent starvation’ and that ‘This criterion is an accentuated form of the factor contained in article 6, paragraph 1(b), which refers to the ‘social and economic needs of the watercourse States concerned.’²⁸ While balancing the various water uses and interests, vital human needs will also come especially into play under (c), which requires the involved States to take into account the dependent population in each watercourse State in the process of equitable and reasonable utilization of an international watercourse. The special regard for vital human needs entailed and reinforced by the human right to water adds weight to these factors.

3. Vital Human Needs under the UN Watercourses Convention

In historic perspective, the Watercourses Convention provides a great step forward towards an integrated approach to water uses and interests. The Watercourses Convention provides a global framework on international water law. It took the UN International Law Commission (ILC) approximately 20 years to prepare the Convention. For quite a long time it was doubtful whether it would enter into force.

The Convention has been criticized for offering inadequate protection of vital human needs, the earth’s ecology, and for not addressing other subjects than States.²⁹ Due to such omissions, the Convention has regularly been considered to reflect a minimum standard. Subsequent treaties or practice may adjust the Convention over time.³⁰ In line with customary treaty interpretation (Article 31 VCLT), the UN Watercourses Convention can include developments such as towards a human right to water and the further agreement on the safeguarding of vital human needs such as reflected in the UNECE Protocol on Water and Health.³¹ Moreover, Article 3 of the UN Watercourses Convention explicitly allows for deviation from the Convention by other (water) agreements.

3.1. Effective priority of vital human needs

Currently, water uses for the fulfilment of vital human needs within the ambit of the human right to water have not reached a stage where they gained inherent priority by agreement or custom under Article 10(1).³² However, Article 10(2) requires special regard to be given to vital human needs entailed by the human right

²⁷ Ibid Article 6.

²⁸ UNGA, *Convention on the Non-Navigational Uses of International Watercourses: Report of the 6th Committee Convening as the Working Group of the Whole* (A/51/869, 1997) 5; Watercourses Convention, Statements of Understanding [1997] ILM 36, 719; UNGA A/49/10, *ILC Report on the work of its Forty-Sixth Session* (Official Records of the General Assembly, Forty-Ninth Session, Supplement No. 10, 1994) 2576, Commentary to Article 10 of the Watercourses Convention.

²⁹ A Nollkaemper, ‘The Contribution of the International Law Commission to International Water Law: Does it reverse the flight from substance?’, *Netherlands Yearbook of International Law* XXVII (1996) 39–73.

³⁰ See ICJ *Gabčíkovo-Nagymaros* Judgment (n 9) para 112, on treaty adaptation to emerging norms of international law.

³¹ McIntyre and Tignino 2013 (n 9), 297–298.

³² There is of yet no international convention in existence explicitly providing water uses for the fulfilment of the human right to water with inherent priority. Though *opinio iuris* and state practice can be argued to establish a human right to water under customary international law, this does not entail sufficient agreement on inherent priority.

to water in the application of equitable and reasonable utilization. Especially when taking developments within international water law into account, it can be argued that article 10(2) UN Watercourses Convention presumes priority to water uses required for vital human needs.³³ According to Tanzi and Arcari:

the protection of vital human needs entails a 'presumptive' priority over all the other factors listed in Article 6, such presumption being rebuttable only on the basis of the specific circumstances of the individual case. That is to say that watercourse States, in discussing the equitable allocation of shared watercourses, cannot avoid starting negotiations, taking the water supplies needed to support vital human needs as a fixed parameter.³⁴

The human right to water further emphasises the fundamental importance of water uses for vital human needs when weighted against other uses.³⁵ According to McIntyre and Tignino:

Couching the protection of vital human needs in human rights terms might do much to make this presumption irrefutable in any circumstances and the protection of vital human needs even more of a *sine qua non* in international water resources law. Accordingly, when clarifying the significance of Article 10(2) in the context of equitable and reasonable use, the commentary to the 1994 ILC Draft Articles confirms that a use of the water resources in question that is at variance with vital human needs is 'inherently inequitable and unreasonable'.³⁶

The human right to water reinforces the weight and presumptive priority of water uses for vital human needs over less urgent water uses in the balancing process of equitable and reasonable utilization of transboundary watercourses.³⁷ The duty to safeguard vital human needs as part and parcel of equitable utilization strengthened by the human right to water implies that, even though theoretically interferences could be justified, in practice most interferences in favour of other less vital water uses will constitute a breach of both the principle of equitable and reasonable utilization and the human right to water, especially in case of discrimination, retrogressive measures, or below minimum core obligations.³⁸ Vital human needs are not granted absolute priority but will usually enjoy effective priority.

3.2. A transboundary human right to water

It can be argued that the position of the human right to water is mutually reinforced by the strong position of vital human needs under international water law. When effectively prioritising vital human needs in the allocation of transboundary waters, the watercourse States practically have a legal obligation to consider the human right to water in each involved State. The human right to water via article 10(2) UN Watercourses Convention thus does not only entail State obligations under their jurisdiction, but also extra-territorial considerations by States sharing waters. This interpretation would be in line with General Comment 15, Paragraph 31: '(...) States parties have to respect the enjoyment of the right in other countries. International cooperation requires States parties to refrain from actions that interfere, directly or indirectly, with the enjoyment of the right to water in other countries.'³⁹ As a result, States have to respect the human right to water, amongst and within States, through the obligation to use and protect international watercourses in an equitable and reasonable manner that requires special regard for vital human needs in each of the involved watercourse States, which vital human needs entail the human right to water

³³ L Boisson de Chazournes, *Fresh Water in International Law* (OUP 2013), 148–151, also referring to other water treaties addressing human needs.

³⁴ Tanzi and Arcari 2001 (n 10), 141.

³⁵ Boisson de Chazournes 2013 (n 33), 150.

³⁶ McIntyre and Tignino 2013 (n 9), 295.

³⁷ *Ibid* 295.

³⁸ CESCR, *The nature of States parties' obligations (art 2, para 1, of the Covenant)* (General comment No 3, 1990), Paragraph 10: 'that every effort has been made to use all resources that are at its disposition in an effort to satisfy, as a matter of priority, those minimum obligations.' See also Article 32 UN Watercourses Convention: 'Unless the watercourse states concerned have agreed otherwise for the protection of the interests of persons, natural or juridical, who have suffered or are under a serious threat of suffering significant transboundary harm as a result of activities related to an international watercourse, a watercourse state shall not discriminate on the basis of nationality or residence or place where the injury occurred, in granting to such persons, in accordance with its legal system, access to judicial or other procedures, or a right to claim compensation or other relief in respect of significant harm caused by such activities carried on in its territory.'

³⁹ CESCR General Comment 15 (n 17) para 31.

obligations towards people under their jurisdiction and extends them to people under the jurisdiction of other involved watercourse States.⁴⁰

4. A Sustainable Balance of Water Uses

The effective priority of vital human needs and mutual reinforcement of the human right to water, may also impact the sustainability of the balance between water uses and interests, which is part and parcel of equitable and reasonable utilization.⁴¹ Sustainability is mentioned explicitly in Article 5 UN Watercourses Convention on the principle of equitable and reasonable utilization: the use and development of an international watercourse is to be 'with a view to attaining optimal and sustainable utilization thereof and benefits therefrom.'⁴² Sustainable development requires a balance between its social, economic and ecological pillars that could be undermined by a bias against economic and ecological uses of freshwater.⁴³ This risk seems limited since the human right to water as well as vital human needs cover only a certain amount of water for vital uses. Nonetheless, economic development and the ecological environment are crucial to the human species and earth as well and not to be dismissed in whole or automatically. Especially in the longer run, many economic and ecological water uses are directly or indirectly vital to humans and their development.

Another risk to the sustainability of the balance under the UN Watercourses Convention is posed by Article 2 addressing surface water and groundwater that normally flow into a common terminus, thereby excluding confined groundwater on which a separate resolution was adopted by the ILC.⁴⁴ When realising the importance of such groundwater resources for human use, especially in arid or conflict areas like in the Middle East, the impact may begin to dawn. Though this omission has been addressed by additional regulation, an integrated approach is not well served by fragmentation.⁴⁵

Moreover, the Convention only applies to transboundary waters and is limited to watercourse States. The requirement of adequate protection of the watercourse and the duty to cooperate in that protection offer a partial solution but may not be enough to guarantee that other sustainability interests are fully taken into account. Unlike the UN Watercourses Convention, the SDG6 goes beyond riparian States' use of international watercourses by emphasizing the provision of water for all and addressing States and non-state actors within and beyond borders for current and future generations.

Another complication is that various uses are relevant to the human right to water, both in safeguarding this right as well as potentially causing a breach of this right. For example, agriculture and industry account for both food production as well as a large part of water pollution. Environmental pollution in turn impacts the quality of drinking water and food security such as related to fisheries and fish habitat including wetlands. Recreation and tourism often conflict with environmental uses of water resources but can also strengthen awareness of human interrelationship with the environment. Various water uses, including those for human needs, are impacted by and can influence boundary delimitations such as in the International Court of Justice (ICJ) Judgment on the *Kasikili/Sedudu Island*, located in the Chobe River, where fisheries and navigation were addressed in addition to the (mere) delimitation of the river border, and the ICJ *Frontier Dispute* Judgement, where access to water for the population of riparian rivers was taken into consideration.⁴⁶

⁴⁰ This extra-territorial effect may partially explain the hesitance of some states to agree to (the substance and status of) a self-standing human right to water, McIntyre and Tignino 2013 (n 9) 300.

⁴¹ See on a sustainable right to water Spijkers (n 14) in this special issue. See for further elaboration on sustainable development and related documents Hildering 2004a (n 1) 9–17, 33–44.

⁴² UN Watercourses Convention (n 6) art 5.

⁴³ See Hildering 2004a (n 1) 143. See also World Water Assessment Programme, *The United Nations World Water Development Report 2015 Water for a Sustainable World*.

⁴⁴ UNGA A/RES/63/124 *The Law of Transboundary Aquifers* [2008]; UNGA A/RES/66/104 *The Law of Transboundary Aquifers* [2011]; Report of the Sixth Committee, *The law of transboundary aquifers* (UN Doc. A/68/470, 2013) containing the text of the 2013 Resolution on the Law of Transboundary Aquifers adopted by the UNGA. See also Brown Weiss 2013 (n 8) 113. Both confined and unconfined groundwater are included in the 1992 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes, entry into force 6 October 1996, 1936 *UNTS* 269. See on the UNECE Convention in comparison to the UN Watercourses Convention, A Tanzi, 'UN Economic Commission for Europe Water Convention' in F Rocha Loures and A Rieu-Clarke (eds), *The UN Watercourses Convention in Force. Strengthening international law for transboundary water management* (Routledge 2013) 231–242.

⁴⁵ See for the ILC Draft Articles on Transboundary Aquifers and related UNGA Resolutions <<https://www.internationalwaterlaw.org/documents/intldocs/>> accessed 27 January 2020.

⁴⁶ Boisson de Chazournes 2013 (n 31) 8–11. ICJ *Kasikili/Sedudu Island* (Botswana v Namibia) Judgment 1999, para 102–103. ICJ *Frontier Dispute* (Burkina Faso v Niger) Judgment 2013, para 101.

Various water uses to be taken into account when aiming for a sustainable balance on a case-to-case basis are now considered by – inherently limited – categorisation of water uses in correspondence with the social, economic and ecological pillars of sustainable development.⁴⁷

4.1. Social water uses

Freshwater uses here categorised as social uses are domestic uses, food production and cultural purposes.⁴⁸ Domestic water uses and food production touch upon all aspects of the human right to water as identified by General Comment 15. They are required for life itself, the quality of life and a life in human dignity. In case of conflict, a balance may need to be struck amongst social water uses.

The human right to water focuses foremost on domestic uses of water. Domestic water uses concern basic human needs and can be divided in drinking water and sanitation.⁴⁹ Within the discussion of a human right to water, this distinction has frequently been made.⁵⁰ It is to be kept in mind, however, that providing drinking water without adequate sanitation would fall short in protecting people's lives considering the health risks and number of casualties due to water related diseases.⁵¹ Drinking water can be defined as 'water which is used, or intended to be available for use, by humans for drinking, cooking, food preparation, personal hygiene or similar purposes', while sanitation can be defined as 'the collection, transport, treatment and disposal or reuse of human excreta or domestic waste water, whether through collective systems or by installations serving a single household or undertaking'.⁵² Meeting these vital human water needs progressively will be State specific and requires 25 to 100 litres per person per day.⁵³

Food production comprises water use for agriculture, cattle-breeding, fishery and fish-breeding.⁵⁴ Approximately 70% of human water use is used for agricultural purposes.⁵⁵ Agriculture also accounts for the largest part of pollution of freshwater resources.⁵⁶ Food security and safety are increasingly at risk due to population growth, poverty, urbanisation and climate change.⁵⁷

Cultural and religious purposes, for example the religious use but also pollution of the Ganges in India, further challenge the concept of ownership of water.⁵⁸ Water is of great importance to indigenous people in multiple ways, including for their cultural identity.⁵⁹ Tourism and recreation both require and pollute water resources, are closely linked to economic uses of water and often intertwine with the ecological state of waters.⁶⁰

4.2. Economic water uses

Individuals, peoples and States have a right to development, beyond mere survival.⁶¹ Social water uses will on a case-to-case basis have to be weighed against economic uses when aiming for equitable and reasonable utilization in line with sustainable development. Economic uses include industrial uses, transport and energy.⁶²

⁴⁷ See Hilderling 2004a (n 1) 14–17 for the classification in social, economic and ecological categories.

⁴⁸ Hilderling 2004a (n 1) 21–24.

⁴⁹ Ibid 22–23.

⁵⁰ See, e.g., Brown Weiss 2013 (n 8) 196.

⁵¹ UNGA Resolution 2010 (n 19) par 2: 'approximately 1.5 million children under 5 years of age die and 443 million school days are lost each year as a result of water- and sanitation-related diseases.'

⁵² ECE Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes [1999] (29 EPL 1999, 200). See on water quality and quantity required to meet the right to water, e.g., Brown Weiss 2013 (n 8) 196–198.

⁵³ In order to meet basic human needs and prevent severe health issues 50 to 100 litres per person a day is required, see World Health Organization, *The right to water* (WHO Factsheet No 35, 2010) <www.ohchr.org/Documents/Publications/FactSheet35en.pdf> accessed 12 September 2017. In Constitutional Court of South Africa, *Mazibuko and Others v City of Johannesburg and Others*, Case CCT 39/09 [2009] ZACC 28, the Constitutional Court rejected setting a quantity by courts.

⁵⁴ Hilderling 2004a (n 1) 23.

⁵⁵ <<http://blogs.worldbank.org/opendata/chart-globally-70-freshwater-used-agriculture>> accessed 27 January 2020.

⁵⁶ FAO and IWMI, *Water pollution from agriculture: a global review* (FAO Rome 2017).

⁵⁷ FAO, *Climate Change and Food Security: A Framework Document* (FAO Rome 2008); FAO, *Water for Sustainable Food and Agriculture. A report produced for the G 20 Presidency of Germany* (FAO Rome 2017).

⁵⁸ In addition to the principle objection against ownership relating to the vital nature of water and to the fact that most water rights actually concern user rights instead of 'ownership' of passing water. Hilderling 2004a (n 1) 24, 97–98.

⁵⁹ Boisson de Chazourmes 2013 (n 33) 154, referring to the Inter-American Court on Human Rights *Xákmok Kásek Indigenous Community v Paraguay* Judgment. See on an indigenous peoples right to water, and how a human right to water could counter their current rights, Gupta, Hilderling and Misiedjan 2014 (n 16) 26–33.

⁶⁰ Hilderling 2004a (n 1) 24.

⁶¹ Hilderling 2004a (n 1) 146–148.

⁶² Ibid 25–28.

Industrial uses of freshwater resources, for example for the production of computers, account for about 22% of global water use.⁶³ While globally agriculture accounts for most water use, especially in developed countries industrial uses account for a significant part of the water use.⁶⁴ Industry also ranks high when it comes to water pollution.⁶⁵ Practically all production processes require water, including industrialised food production.

Transport first and foremost refers to navigation, including freedom of navigation, usually of people and goods, and closely related to economic interests of States.⁶⁶ Shipping accounts for 90% of trade in goods and access to sea is provided for landlocked States.⁶⁷ The UN Watercourses Convention excludes navigation since it became highly regulated separately.⁶⁸ Navigation can be included when impacting other uses and provisions such as in balancing water uses under Article 5 UN Watercourses Convention. In turn, (drinking) water itself is transported increasingly, mainly due to an increase of population living at distance from freshwater resources.⁶⁹ Transport via and of water regularly entails negative impacts on regional ecosystems.

Another important economic use of water is for production of practically all forms of energy, specifically hydropower,⁷⁰ which accounts for over 16% of the global electricity production and approximately 71% of renewable energy resources.⁷¹ The construction of especially large dams for purposes such as flood prevention, water storage, irrigation and production of energy frequently entails negative impacts such as displacement of (millions of) people and alteration of ecological systems.⁷²

4.3. Environmental protection

The natural functions of water are often in need of protection from other water uses. Article 6(1)(a) UN Watercourses Convention requires ecological factors to be taken into account. Moreover, the principle of equitable and reasonable utilization and the no-harm principle seem to be reconciled in a balanced view: in case of significant harm the assumption will be that the threshold of equitable and reasonable utilization has not been met.⁷³ Transboundary harm impacting human health, especially of riparian populations, or otherwise impacting the human right to water, can be assumed to be inequitable when it reaches the threshold of significant.

The ICJ confirmed in the *Costa Rica case* that the risk of significant transboundary harm brings along a duty to undertake a (continuous) environmental impact assessment (EIA).⁷⁴ In case of threats of serious or irreversible environmental damage by changes in water quantity or quality, such as by exploitation beyond replenishment rate or slowly revealed groundwater pollution, application of the precautionary principle is furthermore called for. The human right to water can help trigger the requirement of an EIA in preventing significant harm and *vice versa*. Article 21(2) UN Watercourses Convention prohibits ‘the pollution of an international watercourse that may cause significant harm to other watercourse States or their environment, including harm to human health or safety’. Pollution may already be viewed as a factor under the UN Watercourses Convention Article 6(1)(b) regarding social and economic needs and (c) regarding dependent populations when determining equitable and reasonable utilization, but the prohibition in Article 21 and a human right to water will add to its weight in the process.

⁶³ Ibid 25.

⁶⁴ Cf. WWAP, *The United Nations world water development report, 2016: Water and jobs: facts and figures* <<https://unesdoc.unesco.org/ark:/48223/pf0000244041>> accessed 27 January 2020.

⁶⁵ WWAP, *The United Nations world water development report. Water for People, Water for Life* (2003) 15: ‘Industrial wastewater, like municipal sewage, often contains suspended solids that silt up waterways, suffocate bottom dwelling organisms and impede fish spawning.’

⁶⁶ Boisson de Chazournes 2013 (n 33) 13–16. Other forms of water use for transport include timber floating and movement of coal through water pipes.

⁶⁷ IMO <<https://business.un.org/en/entities/13>> accessed 27 January 2020.

⁶⁸ Tanzi and Arcari 2001 (n 10) 49–51. See, for example, the 1921 Barcelona Convention and Statute on the Regime of Navigable Waterways of International Concern.

⁶⁹ See on urbanization, e.g., Boisson de Chazournes 2013 (n 33) 152.

⁷⁰ Hildering 2004a (n 1) 26–28.

⁷¹ <www.worldenergy.org/data/resources/resource/hydropower/> accessed 19 July 2018. See on international cooperation in the field of hydroelectric power, e.g., DA Caponera, *Principles of Water Law and Administration: National and international* (A.A. Balkema 1992) 214–215.

⁷² World Commission on Dams, *Dams and Development: A new framework for decision-making* (The Report of the World Commission on Dams, Earthscan 2000); on the Grand Ethiopian Renaissance Dam <<https://www.bbc.com/news/world-africa-50328647>> accessed 27 January 2020.

⁷³ Tanzi and Acari 2001 (n 10) 179; Hildering 2004a (n 1) 160–163.

⁷⁴ ICJ *Costa Rica Judgment* 2015 (n 9) para 104.

The natural functions of water are often not considered 'uses.' They have long been taken for granted and are under-represented in economic models even though water is a precondition for all forms of life.⁷⁵ Ecological uses of freshwater resources entail water needed for aquatic ecosystems, the hydrological cycles and the world ecosystems as a whole.⁷⁶ An aquatic environment is defined in Article 3(1) of the Berlin Rules as 'all surface waters and groundwater, the lands and subsurface geological formations connected to those waters, and the atmosphere related to those waters and lands.'⁷⁷ They play a vital part in the ecology of the earth, including as habitat for around 12% of the animal species.⁷⁸ Loss, pollution and overexploitation of aquatic ecosystems such as wetlands impact biodiversity.⁷⁹ Environmental degradation of aquatic ecosystems can cause significant and often irreversible damage, requiring preventive measures and application of the precautionary principle along with environmental impact assessments.⁸⁰

The world ecosystems, climate, oceans, freshwater resources, deserts, forests and people interact.⁸¹ The highly probable human caused climate change exacerbates the freshwater crisis, resulting in more extreme weather patterns such as floods and droughts, sea-level rise, melting ice caps and impacting tidal rivers.⁸² Though our understanding of ecosystems has increased, we are still inclined to look at limited time and space scales such as in the use of the term 'confined' waters. Our comprehension of aquatic ecosystems, hydrological cycles and world ecosystems and how they interact, is to improve in order to sustainably address freshwater issues that sooner or later also impact human life and dignity.

5. Conclusion

The coming into existence of a human right to water has further increased the weight to be given to water uses for vital human needs. This reinforcement of vital human needs in the determination of equitable and reasonable utilization of freshwater resources when allocating transboundary waters between States results in effective priority. The strengthened position of water uses for vital human needs, in turn, requires States sharing international watercourses to take the human right to water into account beyond State borders. It can be successfully argued that in the allocation of transboundary waters, compromising the human right to water by disregarding vital human needs creates the assumption that equitable and reasonable utilization requirements have not been met. This presumption cannot be easily rebutted. In most cases, priority will need to be granted to vital human needs over other less vital uses of water.

Nonetheless, this priority is not absolute or to be automatically granted. Other social uses as well as water uses for economic development and environmental protection remain to be given thorough consideration on a case-by-case basis in order to reach a sustainable balance of water uses under the principle of equitable and reasonable utilization of water resources. In the search for that balance, the following water uses need to be at the core: social uses for vital human needs part and parcel of the human right to water; economic uses essential to human health and development; and ecological water systems providing the backbone of life. A sustainable equitable balance between water uses is to reflect the notion that healthy ecosystems are required to safeguard water quantity and quality for any of the other uses, for current and future generations.

Competing Interests

The author has no competing interests to declare.

⁷⁵ Externalities such as water pollution and its impact on human health and ecosystems are to be internalised in order to, e.g., improve cost-benefit analysis and implement the polluter-pays principle, see Hilderling 2004a (n 1) 159–160.

⁷⁶ Ibid 28–32.

⁷⁷ International Law Association Committee on Water Resources Law, *Berlin Rules on Water Resources*, Fourth Report, Berlin Conference (ILA 2004).

⁷⁸ M. Barlow and T. Clarke, *Blue Gold: The battle against corporate theft of the world's water* (Earthscan 2002) 27.

⁷⁹ Cf. <<https://www.cbd.int/waters/problem/>> accessed 28 January 2020.

⁸⁰ Hilderling 2004a (n 1) 127–128, 155–156.

⁸¹ The IPCC reports <<https://www.ipcc.ch/>> accessed 27 January 2020; IPBES, *Global Assessment Report on Biodiversity and Ecosystem Services* (IPBES 2019).

⁸² World Bank, *High and Dry: Climate Change, Water, and the Economy* (World Bank 2016). See on the relation between population growth, human consumption and loss of species, e.g., B van der Zwaan and A Petersen (eds), *Sharing the Planet: Population – consumption – species, science and ethics for a sustainable and equitable world* (Eburon 2003). See on the relation between water flow and uses, Boisson de Chazournes 2013 (n 33) 24–25, where she also refers to the ICJ *Gabčíkovo-Nagymaros* Judgment 1997 (n 9) para 55.

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