

## Equity across Generations in Implementing International Law on Water

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Water law regulates the use of freshwater resources, such as rivers, lakes, wetlands, aquifers, and glaciers. A considerable challenge is to ensure that these resources remain in good health, so that future generations can make use of them as well. The most urgent problems facing efforts to ensure the sustainable utilization of these freshwater resources include water pollution, depletion of non-rechargeable underground water and fossil water, and diversion of freshwater resources in a way that negatively affects the ecosystem of which such resources often constitute the beating heart.<sup>1</sup>

If one cares about the needs and interests of future generations, it is thus necessary for the present generation to use these freshwater resources sustainably, in a way that does not compromise the ability of future generations to benefit from the same resources. There are different ways to give substance to this obligation of sustainable use.<sup>2</sup> It could be argued that the present generation must leave freshwater resources

<sup>1</sup> On freshwater ecosystems, see e.g. O. McIntyre, 'The Protection of Freshwater Ecosystems Revisited: Towards a Common Understanding of the "Ecosystems Approach" to the Protection of Transboundary Water Resources' (2014) 23:1 *Review of European Community and International Environmental Law* 88–95.

<sup>2</sup> See e.g. E. Brown Weiss, *In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity* (United Nations University 1989); S. Roy Chowdhury, 'Intergenerational Equity: Substratum of the Right to Sustainable Development', in S. Roy Chowdhury and E. Denters (eds.), *The Right to Development in International Law* (Nijhoff 1992) 233–257; E. Brown Weiss, 'Intergenerational Equity: A Legal Framework for Global Environmental Change', in E. Brown Weiss (ed.), *Environmental Change and International Law: New Challenges and Dimensions* (United Nations University Press 1992); E. Brown Weiss, 'Intergenerational Equity and Rights of Future Generations', in T. Buergenthal and P. Nikken (eds.), *The Modern World of Human Rights: Essays in Honour of Thomas Buergenthal* (IIDH 1996) 601–619; K.I. Vibhute, 'Environment, Present and Future Generations: Intergenerational Equity, Justice and Responsibility' (1998) 38:1 *Indian Journal of International Law* 65–73; L.M. Collins, 'Revisiting the Doctrine of Intergenerational Equity in Global Environmental Governance' (2007) 30:1 *Dalhousie Law Journal* 79–140; M. Fitzmaurice, 'Intergenerational Equity Revisited', in G. Hafner and I. Buffard (eds.), *International Law*

in the exact same condition in which it found them. According to a report of the UN Secretary-General, ‘nearly all human traditions recognize that the living are sojourners on Earth and temporary stewards of its resources.’<sup>3</sup> It could also be argued that the present generation can fully exploit these resources, as long as it provides future generations with a viable alternative, or that the present generation can fully exploit the resources as long as the present generation provides future generations with the means (technologies) to repair what the present generation has destroyed. Of course, a middle position is also available: one could argue that the present generation must find an equitable balance between satisfying its own needs and leaving enough for future generations to satisfy their needs. Leaving an *equitable* share of the benefits and burdens of freshwater utilization to future generations is not the same as leaving them an *equal* share, but it means more than leaving to future generations only the minimal resources they need to stay alive. After all, from the previous generations, the present generation inherited much more than that. It could be argued that what the past generations offered to the present generation, the present generation now owes to future generations. In short, the general question of equity across generations also resurfaces in the context of water resources management and exploitation.

The aim of this chapter is not to go into the philosophical debate on what exactly is owned to the future generations, and why, and how much. The aim is more modest. It is to give an overview of some actual examples of how international water law agreements have attempted to achieve an equitable intergenerational balance. This intergenerational balance needs to be found within the legal framework of (international) water law. The foundational principles of this framework are (1) the principle of equitable and reasonable utilization, and (2) the no harm rule, which calls upon States to do all they can – the due diligence obligation – to prevent significant harm, done from the territories under their control, to other States. The

*between Universalism and Fragmentation: Festschrift in Honour of Gerhard Hafner* (Nijhoff 2008) 195–229; D. Shelton, ‘Intergenerational Equity’, in R. Wolfrum and C. Kojima (eds.), *Solidarity: A Structural Principle of International Law* (Springer 2010); E. Brown Weiss, ‘Implementing Intergenerational Equity’, in M. Fitzmaurice, D.M. Ong, and P. Merkouris (eds.), *Research Handbook on International Environmental Law* (Elgar 2010); G.E. Henderson, ‘Rawls and Sustainable Development’ (2011) 7:1 *McGill International Journal of Sustainable Development Law and Policy* 1–32; C. Wolf, ‘Environmental Ethics, Future Generations and Environmental Law’, in A. Marmor (ed.), *The Routledge Companion to Philosophy of Law* (Routledge 2012) 397–413; B.H. Weston, ‘The Theoretical Foundations of Intergenerational Ecological Justice: An Overview’ (2012) 34:1 *Human Rights Quarterly* 251–266; P. Lawrence, ‘Justice for Future Generations: Environment Discourses, International Law and Climate Change’, in B. Jessup and K. Rubenstein (eds.), *Environmental Discourses in Public and International Law* (Cambridge University Press 2012) 23–46; *Intergenerational Solidarity and the Needs of Future Generations*, Report of the Secretary-General of the United Nations, UN Doc. A/68/322 (15 August 2013).

<sup>3</sup> *Intergenerational Solidarity and the Needs of Future Generations*, *supra* note 2 at 4.

focus in this contribution is on the first principle, because this is the principle which can most naturally connect with the principle of intergenerational equity.

First, it is necessary to briefly explain why the no harm rule has much less potential to become an intergenerational equity protection principle. The no harm rule reflected in Article 7 of the Convention on the Non-Navigational Uses of International Watercourses ('Watercourses Convention'),<sup>4</sup> is as follows:

Watercourse States shall, in utilising an international watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other watercourse States.

The general no harm rule applies *intragenerationally*: it applies in the relations between neighbouring States. It does not apply *intergenerationally*: it does not protect future generations from harm caused by the present generation. It is important to note here that the provision on preventing pollution, Article 21 of the Watercourses Convention, allows for a more intergenerational interpretation. It calls upon States to prevent the pollution of an international watercourse 'that may cause significant harm to other watercourse States or to their environment, including harm to human health or safety, to the use of the waters for any beneficial purpose or to the living resources of the watercourse'.<sup>5</sup>

In any case, in scholarship, there is little support for an intergenerational interpretation of the general no harm rule, and there appear to be no hints supporting such an intergenerational approach. And, thus, the more promising route to take is to focus on an intergenerational interpretation of the equitable use principle, as reflected *inter alia* in Article 5 Watercourses Convention, on which more below. The central question of this contribution is thus: *What is the link between the principle of intergenerational equity and the principle of equitable and reasonable utilization in (transboundary) water law?*

The research question refers to the principle of intergenerational equity, and not to sustainable development. Many of the agreements that will be analysed in this contribution refer to the latter. For example, Article 5 of the Watercourses Convention links equitable and reasonable utilization to sustainable utilization, and not explicitly to intergenerational equity. It is thus apt to say a few words about the relationship between sustainable utilization (or sustainable development) and the principle of intergenerational equity.

According to the highly influential UN report 'Our Common Future', the essence of sustainable development is that the development policy of States must meet the needs of the present generation without compromising the ability of future

<sup>4</sup> Convention on the Law of the Non-Navigational Uses of International Watercourses (entry into force 17 August 2014), UNDoc. A/51/869, or as annex to UNGA Resolution A/RES/51/229 of 21 May 1997.

<sup>5</sup> See O. McIntyre, *Environmental Protection of International Watercourses under International Law* (Ashgate 2007).

generations to meet their own needs.<sup>6</sup> And the essence of the legal principle of intergenerational equity is that States ought to conserve and use the environment and natural resources for the benefit of both present and future generations.<sup>7</sup> In short, to understand how sustainable development and intergenerational equity relate to each other in the language of international law, it is best to see the former as an *objective* of the international community and the latter as one of the *legal principles* that must be applied in order to achieve this objective. Intergenerational equity is not the only legal principle relevant for realizing the objective of sustainable development. Other relevant principles include *intragenerational* equity, public participation, and the principle of integration of the social, economic, environmental, and human rights aspects of development.<sup>8</sup> The latter has been linked in interesting ways to the intergenerational equity principle, raising the (philosophical) question about the possibility of human rights of future generations.<sup>9</sup>

Before directly addressing the central question, it is perhaps useful to further delineate the research by clarifying what this contribution is *not* about. First of all, this contribution does not purport to analyse the principle of intergenerational equity in a general sense, but only in its application to water resources. The principle might have a different meaning depending on the natural resource and context to which it is applied – be it air, sunlight, oil, gas, forests, plants, animals, or water. Or it might permit a cross-cutting application, regardless of the resource, as is proposed for example in the so-called ‘sustainable landscape approach to development’.<sup>10</sup> In this

<sup>6</sup> ‘Our Common Future’: *Report of the World Commission on Environment and Development*, transmitted to the General Assembly by the Secretary-General on 4 August 1987, UN Doc. A/42/427, para. 27.

<sup>7</sup> Summary of Proposed Legal Principles for Environmental Protection and Sustainable Development, adopted by the WCED Experts Group on Environmental Law, published in *Our Common Future*, principle 2.

<sup>8</sup> See especially the Rio Declaration on Environment and Development, published in the Report of the UNCED, held in Rio de Janeiro, between 3 and 14 June 1992, UNDoc. A/CONF.151/26/Rev.I (Vol I) (‘Rio Declaration on Environment and Development’). The UN General Assembly unanimously endorsed this declaration in resolution 47/190, adopted 22 December 1992. And see the New Delhi Declaration of Principles of International Law relating to Sustainable Development, adopted by the International Law Association (April 2002) UN Doc. A/CONF.199/8, and published, with an introduction by N. Schrijver (2002) *Netherlands International Law Review* 299–305.

<sup>9</sup> On the human right to water, see General Comment No. 15 adopted by the UN Committee on Economic, Social and Cultural Rights in 2002. Besides reference in human rights documents, the human right to water is also referred to in typical water law agreements such as the London Protocol on Water and Health to the 1992 Helsinki Convention, the Charter of the Senegal Waters of 2002, the Charter of the Niger Waters of 2008, and the 2012 Water Charter of the Lake Chad Basin. This is seldom if at all linked to any rights future generations may have. See also O. McIntyre, ‘Environmental Protection and the Human Right to Water: Complementarity and Tension’, in L. Westra, C.L. Soskolne, and D.W. Spady (eds.), *Human Health and Ecological Integrity: Ethics, Law and Human Rights* (Routledge 2012).

<sup>10</sup> See e.g. D. Treguer and E. Pehu, *Moving toward a Sustainable Landscape Approach to Development* (World Bank Group 2014).

contribution, a position in this debate will not be taken, and limit ourselves to an analysis of the water law context. This is not to suggest that the principle of equity has evolved in that context in splendid isolation. Indeed, developments elsewhere – take the law of the sea as an example – do feed into the process of evolution of the principle as applied to water resources.<sup>11</sup> But an examination of this cross-fertilization falls beyond the scope of this paper.

Second, this is a chapter about water *law*; it is only indirectly about moral or philosophical obligations or theories of intergenerational equity. Third, the focus is on an analysis of *existing* international and domestic water law, not on how the law *ought* to read. This chapter is thus largely descriptive in nature, not normative. At the same time, the international and domestic regulations and policies referred to in this paper might serve as examples for States that have not yet adopted similar regulations and policies. They have been selected because they contain interesting ideas on how to give meaning to intergenerational equity in the framework of water law. They are to be considered *best practices*, and, as mentioned above, thus do not necessarily paint a representative picture of the current state of water law. Most water law pays much less attention to intergenerational equity than the examples referred to in this paper.

Fourth, this chapter does not look at *regional* water law, such as the water law of the EU. To do so would require an exploration of the particularities of this specific regional legal order, without which it is difficult to understand the EU legislation in this field. At the same time, it must be kept in mind, when we analyse some of the agreements between States that are members of the EU, and when we analyse the domestic water law of some EU Member States, that these are heavily influenced by EU water law, especially the Water Framework Directive of 2000.<sup>12</sup>

This chapter is structured as follows. The next section examines the principle of intergenerational equity as reflected in the Watercourses Convention. This Convention is selected as starting point because it is the only convention on general international water law that was prepared and drafted at the global level – the level of the UN – in part with the aim of codifying already existing CIL. This was certainly the case for Article 5 of the Watercourses Convention, the provision which contains the principle of equitable and reasonable use. The idea is that this

<sup>11</sup> See T. Cottier, *Equitable Principles of Maritime Boundary Delimitation: The Quest for Distributive Justice in International Law* (Cambridge University Press 2015).

<sup>12</sup> Water Framework Directive, directive 2000/60/EC, adopted by the European Parliament and the Council of Ministers of the EU on 23 October 2000. The aim of the Directive was to promote a more coherent water policy with the adoption of a European framework for water management and water protection for each river basin district. There are plenty of references to sustainable development therein. Most importantly, Article 1 identified the establishment of a framework for the protection of water resources which ‘prevents further deterioration and protects and enhances the status of aquatic ecosystems’ and ‘promotes sustainable water use based on a long-term protection of available water resources’ as one of the purposes of this Directive.

will help get an accurate picture of the content of this fundamental principle of international water law. The third section of the chapter looks at more specific international regulations in the field of freshwater management. The agreements referred to have all been selected because they contain interesting ideas on how to give meaning to intergenerational equity in the framework of international water law. Together they constitute a collection of innovative and progressive suggestions of how to build on the fundamental principles of international water law, adding a more pronounced intergenerational, or 'green', layer to them. Taken together, the selected international regulations certainly do not provide a representative picture of the current state of international water law. Not all water-related agreements pay as much attention to intergenerational equity as the examples referred to in this paper. What they do is provide an interesting collection of best practices. The fourth and fifth sections of the chapter look at examples of domestic law and policies in which the principle of intergenerational equity has been applied in the context of water management in an interesting way. Finally, the chapter ends with a general conclusion.

#### THE PRINCIPLE OF INTERGENERATIONAL EQUITY IN THE WATERCOURSES CONVENTION

How does the principle of intergenerational equity take shape in international water law? To find the answer, the Watercourses Convention is the starting point. This multilateral treaty is generally considered to provide the global legal framework. It does not have that many State Parties; however, it is generally considered to reflect CIL, binding on all States.<sup>13</sup>

International water law deals mostly with the shared utilization of transboundary rivers, lakes, aquifers, and their ecosystems. Traditionally, international water law was primarily about obligations one State owed to another State with which it happened to share a particular freshwater resource. This explains the predominance in international water law of the so-called 'no harm principle', which says that any State must take all appropriate measures to prevent any use of an international watercourse, located within its territory, causing significant harm *to another State*. A similar provision is Article 2 of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes of the UNECE, according to which States must 'prevent, control and reduce any transboundary impact'.<sup>14</sup> Transboundary impact is defined, in Article 1(2) of the same convention, as 'any significant

<sup>13</sup> As of September 2017, the Convention has thirty-six State parties.

<sup>14</sup> Convention on the Protection and Use of Transboundary Watercourses and International Lakes (entry into force 6 October 1996). The Convention had forty-one State parties by September 2015.

adverse effect on the environment . . . within an area under the jurisdiction of another Party'.<sup>15</sup> The UNECE Convention is the other global convention on international water law, coexisting together with the Watercourses Convention.

The no harm rule thus protects one State from harmful effects caused by activities of another State – or activities taking place within the territory of another State. But, as explained already briefly above, it does not protect the future generations from harmful effects caused by the present generation. In recent years, attention is increasingly paid to obligations the present generation owes to future generations with whom it also 'shares' a freshwater resource. How can and does international water law deal with these concerns? This is a question about *intergenerational* equity, i.e. the relationship between the present generation and future generations, and not about *intragenerational* equity, i.e. the relationship between different communities (States) existing within the present generation.<sup>16</sup> One could imagine a version of the no harm rule which prohibits both intra- and inter-generational harm:

*Watercourse States shall, in utilising an international watercourse situated within their territories, take all appropriate measures to prevent the causing of significant harm to both the present and future generations of other watercourse States as well as their own.*

Such an approach to the no harm rule is so far not reflected in existing international water law.<sup>17</sup> But existing international water law is not formulated in such a way as to explicitly exclude such an intra- and inter-generational version of the no harm rule interpretation, or hinder its emergence through practice.

Existing international water law is not entirely silent when it comes to intergenerational relations and concerns. The Watercourses Convention's Preamble already makes it explicit that ensuring the promotion of the sustainable utilization of international watercourses is done 'for present and future generations'. It thus links sustainable utilization to the principle of intergenerational equity in a way that

<sup>15</sup> Article 2 of the UNECE Convention.

<sup>16</sup> For some recent scholarship on the principle of intergenerational equity, see e.g. J. Spier, 'Intergenerational Equity: An Aspiration or an Effective Weapon?', in A. Papaux and S. Zurbuchen (eds.), *Philosophy, Law and Environmental Crisis* (Swiss Institute of Comparative Law 2016); Z. Hadjiargyrou, 'A Conceptual and Practical Evaluation of Intergenerational Equity in International Environmental Law' (2016) 18: 3–4 *International Community Law Review* 248–277; C. Redgwell, 'Principles and Emerging Norms in International Law: Intra- and Inter-generational Equity', in C.P. Carlame, K.R. Gray, and R.G. Tarasofsky (eds.), *The Oxford Handbook of International Climate Change Law* (Oxford University Press 2016); C. Molinari, 'Principle 3: From a Right to Development to Intergenerational Equity', in J.E. Viñuales, *The Rio Declaration on Environment and Development: A Commentary* (Oxford University Press 2015).

<sup>17</sup> See also the Berlin Rules, Commentary to Article 8. The Berlin Rules on Water Resources, approved by the ILA's Water Resources Law Committee in 2004 (2004) 71:II *International Law Association Reports of Conferences* 334–421.

was explained above. But the most relevant provision is Article 5 Watercourses Convention, which reads as follows (where relevant):<sup>18</sup>

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.

Article 5 does not make explicit whether the obligation of equitable utilization is restricted to balancing the uses of different States sharing a watercourse at present times (*intragenerational equity*) or whether it includes an obligation to balance the rights and uses of the present and the future generation (*intergenerational equity*).

One might expect the reference to ‘sustainable utilization’ in Article 5 to be of some relevance here. But the International Law Commission (ILC), which is responsible for the drafting of the provision, said very little about the intended meaning of ‘sustainable utilization’.<sup>19</sup> And thus others jumped in to provide a definition. An interesting proposal came from the International Law Association. In 2004, it defined ‘sustainable use’ as follows:

The integrated management of resources to assure efficient use of and equitable access to waters for the benefit of current and future generations while preserving renewable resources and maintaining non-renewable resources to the maximum extent reasonably possible.<sup>20</sup>

The suggestion was to link sustainable use to equitable use in such a way that equitable use implies an obligation to ensure equitable access to waters for both present and future generations. If Article 5 of the Watercourses Convention makes one thing clear, it is that the obligation of equitable and reasonable utilization of an international watercourse includes sustainable utilization thereof. But what does

<sup>18</sup> According to the Convention’s Preamble, the Watercourses Convention was inspired by a shared conviction among States that ‘a framework convention will ensure the utilization, development, conservation, management and protection of international watercourses and the promotion of the optimal and sustainable utilization thereof for present and future generations’.

<sup>19</sup> International Law Commission, ‘Draft Articles on the Law of the Non-Navigational Uses of International Watercourses and Commentaries Thereto’ (1994) II *Yearbook of the International Law Commission* Pt. Two. This has a good reason: the reference to ‘sustainable use’ was added at the request of the Netherlands and Finland, when the ILC’s Draft Articles on the Law of the Non-Navigational Uses of International Watercourses, which were finished in 1994 and constituted the basis of the text of the Watercourses Convention (which was itself adopted in 1997), were discussed by the States. See the Summary records of the 15th meeting of the Sixth Committee of the UN General Assembly, held on Tuesday, 8 October 1996, UN Doc. A/C.6/51/SR.15, p. 2.

<sup>20</sup> Berlin Rules, Article 3(19). The Commentary explains that this definition was derived from declarations on sustainable development, such as the Rio Declaration of 1992.

this mean concretely? Article 6 of the Watercourses Convention might be of some help here. This provision reads as follows (where relevant):

Utilization of an international watercourse in an equitable and reasonable manner within the meaning of article 5 requires taking into account all relevant factors and circumstances, including . . . existing *and potential* uses of the watercourse.

In the ILC commentary accompanying this provision, it is explained that inclusion of this factor in the list was done ‘in order to emphasize that neither [existing nor potential use] is given priority, while recognizing that one or both factors may be relevant in a given case’.<sup>21</sup> In other words, the existing and potential uses of the watercourse must be balanced against each other.

The UNECE Convention has a clear reference to future generations. According to this Convention, State Parties to the Convention shall be guided, *inter alia*, by the principle that ‘water resources shall be managed so that the needs of the present generation are met without compromising the ability of future generations to meet their own needs’.<sup>22</sup> This is a clear reference to the concept of sustainable development as defined in the Brundtland Report.

#### FUTURE GENERATIONS IN SPECIFIC INTERNATIONAL AGREEMENTS

How is the principle of intergenerational equity reflected in specific international agreements regulating the use of a particular transboundary watercourse? That is the question to be addressed in this section.

This chapter looks at the agreements regulating the joint management of the River Danube,<sup>23</sup> the River Meuse,<sup>24</sup> the Orange-Senqu River,<sup>25</sup> the river between

<sup>21</sup> ILC, *Draft Articles and Commentaries Thereto Adopted by the Drafting Committee on Second Reading* (ILC 1994) 101.

<sup>22</sup> UNECE Convention art. 2(5)(c). See O. Spijkers, ‘The Sustainable Development Goals as Catalyst for the Sustainable Management of Water Resources’ (2015) 24 *Journal of Water Law* 115–125; O. McIntyre, ‘The Principle of Equitable and Reasonable Utilisation’, in A. Tanzi, O. McIntyre, A. Koliopoulos, A. Rieu-Clarke, and R. Kinna (eds.), *The UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes* (Brill Nijhoff 2015).

<sup>23</sup> Convention on Co-operation for the Protection and Sustainable Use of the River Danube (entry into force in 1998). The text is available at the official website of the International Commission for the Protection of the Danube River [www.icpdr.org/](http://www.icpdr.org/) accessed 30 November 2017.

<sup>24</sup> Accord concernant la protection de la Meuse (Agreement on the protection of the Meuse) (signed on 26 April 1994, no longer in force); Accord international sur la Meuse (International Agreement on the Meuse) (entry into force in 2006) [www.meuse-maas.be/](http://www.meuse-maas.be/) accessed 30 November 2017.

<sup>25</sup> Agreement for the Establishment of the Orange-Senqu Commission (signed 3 November 2000). The text is available on the website of the Orange-Senqu River Commission (ORASECOM) at [www.orasecom.org/about/agreements.aspx](http://www.orasecom.org/about/agreements.aspx) accessed 30 November 2017.

Senegal and Mauritania,<sup>26</sup> Lake Tanganyika,<sup>27</sup> and the Niger River basin,<sup>28</sup> the Guarani Aquifer,<sup>29</sup> and the transboundary rivers shared by Kazakhstan and China.<sup>30</sup> The agreements are examined in chronological order below.<sup>31</sup>

### Danube

The Danube Convention is full of references to the imperative need for a balance between present and future generations' interests, short and long term, economy and the environment.<sup>32</sup> Already in the Preamble, the States expressed concern 'over the occurrence and threats of adverse effects, in the short or long term, of changes in conditions of watercourses within the Danube River Basin on the environment, economies and well-being of the Danubian States'. This has motivated the States to strive for a 'lasting improvement and protection' of the Danube River and 'sustainable water management'.<sup>33</sup>

<sup>26</sup> Charte des Eaux du Fleuve Sénégal (Charter of Senegal River Waters) (signed on 28 May 2002). The text is available at the website of the Organisation pour la Mise en Valeur du fleuve Sénégal (OMVS) [www.portail-omvs.org/](http://www.portail-omvs.org/) accessed 30 November 2017.

<sup>27</sup> Convention on the Sustainable Management of Lake Tanganyika (entry into force in 2005) <http://lta.iwlearn.org/documents/the-convention-on-the-sustainable-management-of-lake-tanganyika-eng.pdf> accessed 30 November 2017.

<sup>28</sup> La Charte de l'eau du bassin du Niger (Niger Basin Water Charter) (signed on 30 April 2008). The text is available at the website of the Autorité du Bassin du Niger [www.abn.ne/](http://www.abn.ne/) accessed 30 November 2017.

<sup>29</sup> Guarani Aquifer Agreement (signed on 2 August 2010, entry into force 26 November 2020) <http://faolex.fao.org/docs/pdf/mul-143888English.pdf> accessed 30 November 2017.

<sup>30</sup> Agreement between the Government of the Republic of Kazakhstan and the People's Republic of China on water quality protection of transboundary waters (into force on 22 February 2011) <http://faolex.fao.org/docs/texts/bi-110874.doc> (only in Chinese and Russian) accessed 30 November 2017. On this treaty, see O. Spijkers, X. Li, and L. Dai, 'Sustainable Development in China's International and Domestic Water Law' (2015) 24(5/6) *Journal of Water Law* 207 at sec. 2.1.

<sup>31</sup> The aim is not completeness, but to identify certain interesting examples. This discussion could also have referred to, *inter alia*, Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin (adopted 5 April 1995); Agreement on the Nile River Basin Cooperative Framework of 2009. For a useful collection of water law materials, see <http://internationalwaterlaw.org/documents/> accessed 30 November 2017.

<sup>32</sup> For some recent scholarship, see R. Moynihan, 'The Contribution of the UNECE Water Regime to Transboundary Cooperation in the Danube River Basin', in A. Tanzi, O. McIntyre, A. Koliopoulos, A. Rieu-Clarke, and R. Kinna, *supra* note 22; M. Ambrus, 'Legitimacy Narratives in Polycentric Water Law and Governance: The Strategies of the Danube Commission' (2014) 11 *International Organizations Law Review* 83–113; I. Grexa, 'La gestion commune des fleuves internationaux: l'exemple de la Convention sur le Danube de 1948', in B. Aurescu and A. Pellet (eds.), *Actualité du droit des fleuves internationaux: acte des journées d'étude des 24 et 25 octobre 2008* (Pedone 2010); M. Koyano, 'Effective Implementation of International Environmental Agreements: Learning Lessons from the Danube Delta Conflict', in T. Komori and K. Wellens (eds.), *Public Interest Rules of International Law: Towards Effective Implementation* (Ashgate 2009).

<sup>33</sup> Danube Convention, *supra* note 23 at preamble.

Looking at the operative paragraphs, one sees that Article 2 of the Danube Convention defines as the objective to ‘strive at achieving the goals of a sustainable and equitable water management’. The Danubian States pledge to take measures aimed at the ‘sustainable development and environmental protection of the Danube River’, in particular the ‘sustainable use of water resources for municipal, industrial and agricultural purposes as well as the conservation and restauration of ecosystems’. Here, we thus find a clear reference to a ‘green’ version of the principle of equitable utilization, taking intergenerational and sustainable interests into account.

Article 5, on prevention, control, and reduction of transboundary impact, imposes an obligation on States to take all sorts of measures ‘to ensure efficient water quality protection and sustainable water use and thereby also to prevent, control and reduce transboundary impact’.<sup>34</sup> It is clear from this formulation that the obligation to prevent transboundary impact or harm is secondary to the obligation of equitable and sustainable use.<sup>35</sup> Clearly, then, the intergenerational references in the treaty are linked to equitable utilization, and not to the no harm rule.

### *Meuse*

The purpose of the old Accord concernant la protection de la Meuse was to ‘preserve and improve the quality of the Meuse’.<sup>36</sup> The Agreement urged States to abide by certain principles that are all central to sustainable development, including the precautionary principle, the principle of prevention, and the polluter pays principle.<sup>37</sup> The States also pledged to consult each other in order to ensure the sustainable development of the river.<sup>38</sup> The Agreement did not refer to equitable

<sup>34</sup> For the linkage between the Danube and the UNECE Convention, see e.g. Moynihan, ‘The Contribution of the UNECE Water Regime to Transboundary Cooperation in the Danube River Basin’, *supra* note 32.

<sup>35</sup> Transboundary impact is defined as follows: ‘Any significant adverse effect on the riverine environment resulting from a change in the conditions of waters caused by human activity and stretching out beyond an area under the jurisdiction of a Contracting Party. Such changes may affect life and property, safety of facilities and the aquatic ecosystems concerned.’ *Ibid.* at art. 1(c). Article 6 elaborates on the measures States must take to avoid transboundary impact and strive towards sustainable and equitable use of the water resources.

<sup>36</sup> Accord concernant la protection de la Meuse at art. 2(1). On this old agreement, see e.g. J. Verhoeven, ‘De La Haye à Gand en passant par Charleville-Mézières: histoires d’Escaut et de la Meuse’, in R. Andersen et al. (eds.), *En hommage à Francis Delpérée: itinéraires d’un constitutionnaliste* (Bruylant 2007); J. van Dunné, ‘Transboundary Pollution and Liability Issues: Private Law vs Public International Law Approaches: The Cases of the Rivers Rhine and Meuse’ (1999) *Acta juridica* 303–338; J. Verhoeven, ‘Les accords de Charleville-Mézières du 26 avril 1994 sur l’Escaut et sur la Meuse’ (1997) 43 *Annuaire français de droit international* 799–809; Pierre d’Argent, ‘L’évolution du Statut juridique de la Meuse et de l’Escaut: une mise en perspective des Accords de Charleville-Mézières du 26 avril 1994’ (1997) 30 *Revue belge de droit international* 133–171.

<sup>37</sup> Accord concernant la protection de la Meuse at art. 3(2).

<sup>38</sup> *Ibid.* at art. 3(5).

utilization. The no harm principle was only referred to in the paragraph on the precautionary principle, in the sense that States may not use lack of scientific certainty as excuses not to take measures to prevent transboundary impact.<sup>39</sup>

The new Accord international sur la Meuse, adopted a few years later, was made to replace the older agreement.<sup>40</sup> Again, there is no explicit reference to the two foundational principles of international water law, but there is again a reference to the same principles of sustainable development referred to in the previous agreement.<sup>41</sup>

### *Orange-Senqu River*

Another interesting example is the Agreement for the Establishment of the Orange-Senqu Commission.<sup>42</sup> In the Preamble, the States express a commitment ‘towards the realization of the principle of equitable and reasonable utilization, as well as the principle of sustainable development with regard to the River System’.<sup>43</sup> The two principles thus need to be taken into account, but that says little about how the two relate to each other.

If one looks at the provision on the tasks of the Council – the highest body of the Orange-Senqu Commission – one sees that one of its tasks is to advise the Parties on ‘the equitable and reasonable utilization of the water sources in the River System to support sustainable development in the territory of each Party’.<sup>44</sup> This suggests that equitable use must be regarded as a means to ensure sustainable development. That is a clear indication that we must interpret the principle of equitable use in a sustainable context, i.e. as referring to both intra- and inter-generational equity.

The Agreement also contains an article outlining the obligations of the States themselves. These provisions are very much modelled after the Watercourses Convention. The equitable utilization principle reads as follows:

The Parties shall, in their respective territories, utilise the resources of the River System in an equitable and reasonable manner with a view to attaining optimal and sustainable utilisation thereof, and benefits therefrom, consistent with adequate protection of the River System.<sup>45</sup>

<sup>39</sup> Ibid. at art. 3(2).

<sup>40</sup> For some background on implementation, see A. van Heezik, ‘In Troubled Waters: Transboundary Meuse River Basin Politics’, in N. Disco and A. van Heezik (eds.), *Different Strokes for Different Folks: 50 Years of Agreements and Disagreements in the Rhine, Meuse, Scheldt and Ems River Basins* (Eburon Academic Publishers 2014).

<sup>41</sup> Accord international sur la Meuse at art. 3(1).

<sup>42</sup> For some background and context, see e.g. I. Jacobs, *The Politics of Water in Africa: Norms, Environmental Regions and Transboundary Cooperation in the Orange-Senqu and Nile Rivers* (Continuum 2012).

<sup>43</sup> Agreement for the Establishment of the Orange-Senqu Commission, Preamble.

<sup>44</sup> Ibid. at art. 5.2.2.

<sup>45</sup> Ibid. at art. 7.2.

Similarly, the no harm rule is worded as follows:

The Parties shall, in utilising the resources of the River System in their territories, take all appropriate measures to prevent the causing of significant harm to any other Party.<sup>46</sup>

This general no harm rule is worded in a purely inter-State way. But further down, one finds an interesting application of the no harm principle, which is formulated as follows:

The Parties shall individually and jointly prevent, reduce and control pollution of the River System that may cause significant harm to one or more of the Parties, including harm to the environment, or to human health or safety, or to the ecosystem of the River System.<sup>47</sup>

Especially the latter phrase suggests a more expansive interpretation of the no harm rule, one that also protects the environment itself from harm, regardless of whether neighbouring States may suffer the consequences.

Since frequent reference is made in the Agreement to the Revised Protocol on Shared Watercourses in the Southern African Development Community (SADC),<sup>48</sup> it might be interesting to take a look at this regional treaty as well.<sup>49</sup> The Protocol was inspired by a conviction of the ‘need for coordinated and environmentally

<sup>46</sup> Ibid. at art. 7.3.

<sup>47</sup> Ibid. at art. 7.13.

<sup>48</sup> According to Articles 7.3 and 7.13 of the Agreement for the Establishment of the Orange-Senqu Commission, both the terms ‘equitable and reasonable’ and ‘significant harm’ must be interpreted in line with the Revised Protocol on Shared Watercourses in the Southern African Development Community.

<sup>49</sup> See e.g. F. Sindico and S. Hawkins, ‘The Guarani Aquifer Agreement and Transboundary Aquifer Law in the SADC’ (2015) 24(3) *Review of European, Comparative & International Environmental Law* 318–329; R. Kinna, ‘The UNECE Water Convention Viewed from the Perspective of the SADC Revised Protocol on Shared Watercourses’, in A. Tanzi (ed.), *The UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes* (Brill 2015); D. Malzbender and A. Earle, ‘Southern Africa’, in F.R. Loures and A. Rieu-Clarke (eds.), *The UN Watercourses Convention in Force: Strengthening International Law for Transboundary Water Management* (Earthscan 2013); P. Canelas de Castro, ‘Regional Responses to the Glocal Water Crisis: the EU and SADC Experiences compared’, in F. Laursen (ed.), *The EU and Federalism: Politics and Policies Compared* (Ashgate 2011); S. Lindemann, ‘Success and Failure in International River Basin Management: The Case of Southern Africa’, in H.G. Brauch (ed.), *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts* (Springer 2009); P. van der Zaag, ‘Southern Africa: Evolving Regional Water Law and Politics’, in J. Dellapenna and J. Gupta (eds.), *The Evolution of the Law and Politics of Water* (Springer 2009); L.J. Kotzé, ‘The Southern African Development Community Experience in Shared Watercourse Governance’, in S. Hart (ed.), *Shared Resources: Issues of Governance* (IUCN 2008).

sound development of the resources of shared watercourses in the SADC Region in order to support sustainable socioeconomic development'.<sup>50</sup>

Pursuant to this conviction, one of the protocol's principal objectives is to 'promote a coordinated and integrated environmentally sound development and management of shared watercourses'.<sup>51</sup> The term 'management' is defined in the framework of sustainable development, as follows:

'Management of a shared watercourse' means . . . planning the sustainable development of a shared watercourse [and] promoting the rational, equitable and optimal utilisation, protection, and control of the watercourse.<sup>52</sup>

Another principal objective is to 'advance the sustainable, equitable and reasonable utilisation of the shared watercourses'.<sup>53</sup> The States are free to use the watercourses within their territory, as long as this is done in accordance with the protocol's principles. Different ways of using the watercourse are identified, including environmental use.<sup>54</sup> The latter is defined as 'the use of water for the preservation and maintenance of ecosystems'.<sup>55</sup> This is obviously a permitted type of use, but it is just one of many.

As noted, the Protocol obliges States to comply with certain principles when using their watercourses. In this list of general principles, the need for a balance between interests of present and future generations clearly is reflected, as the protocol requires that

State Parties shall maintain a proper balance between resource development for a higher standard of living for their people and conservation and enhancement of the environment to promote sustainable development.<sup>56</sup>

There is also a variation of the equitable use principle, worded as follows:

Watercourse States shall in their respective territories utilise a shared watercourse in an equitable and reasonable manner. In particular, a shared watercourse shall be used and developed by Watercourse States with a view to attain 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 for the benefit of current and future generations.<sup>57</sup>

<sup>50</sup> Revised Protocol on Shared Watercourses in the Southern African Development Community (1995) preamble.

<sup>51</sup> *Ibid.* at art. 2(c).

<sup>52</sup> *Ibid.* at art. 1.

<sup>53</sup> *Ibid.* at art. 2(b).

<sup>54</sup> *Ibid.* at art. 3(2).

<sup>55</sup> *Ibid.* at art. 1(1); *ibid.* at art. 4(2).

<sup>56</sup> *Ibid.* at art. 3(4).

<sup>57</sup> *Ibid.* at art. 3(7)(a).

This is almost entirely the same as the provision in the Watercourses Convention, but the addition at the end is interesting. It is an explicit reference to the need to find an intergenerational balance, a reference not found in the Watercourses Convention.

There is also a reference, in the list of principles, to the no harm rule:

State Parties shall, in utilising a shared watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other Watercourse States.<sup>58</sup>

There is no reference to the interests of future generations. But a bit further down, a variation of the no harm rule focusing on pollution can be found:

State Parties shall, individually and, where appropriate, jointly, prevent, reduce and control the pollution *and environmental degradation* of a shared watercourse that may cause significant harm to other Watercourse States or to their environment, including harm to human health or safety, to the use of the waters for any beneficial purpose or to the living resources of the watercourse.<sup>59</sup>

Again, the addition – in italics – to the otherwise copy-pasted text of the provision in the Watercourses Convention is telling here.

### Senegal River

Another interesting example is the Charter of Senegal River Waters.<sup>60</sup> Like the Orange-Senqu Agreement, the Senegal River Charter also refers to various kinds of uses of the waters and the need to divide the scarce resources between all these different uses. In the Preamble, States are reminded that, when allocating the

<sup>58</sup> Ibid. at art. 3(10)(a).

<sup>59</sup> Ibid. at art. 4(2)(b)(i).

<sup>60</sup> See e.g. M.M. Mbengue, 'A Model for African Shared Water Resources: The Senegal River Legal System' (2014) 23 *Review of European, Comparative and International Environmental Law* 59–66; F. Padt and J.C. Sanches, 'Creating New Spaces for Sustainable Water Management in the Senegal River Basin' (2013) 53 *Natural Resources Journal* 265–284; M.M. Mbengue, 'The Senegal River Legal Regime and Its Contribution to the Development of the Law of International Watercourses in Africa', in L. Boisson de Chazournes, *International Law and Freshwater* (Oxford University Press 2013); U. Alam, 'Cooperating Internationally over Water: Explaining L'espace OMVS' (2012) 50 *Journal of Modern African Studies* 175–199; M. Kipping, 'Water Security in the Senegal River Basin: Water Cooperation and Water Conflicts', in H.G. Brauch (ed.), *Facing Global Environmental Change* (Springer 2009); M. Vick, 'The Senegal River Basin: A Retrospective and Prospective Look at the Legal Régime' (2006) 46 *Natural Resources Journal* 211–243; A.S. Ba and M.M. Mbengue, 'Le Régime juridique du fleuve Sénégal: aspects du droit des cours d'eau dans un contexte régional' (2006) 12 *African Yearbook of International Law* 309–347; M. Kipping, *Konflikte und Kooperation um Wasser: Wasserpolitik am Senegalfluss und internationales Flussmanagement im Südlichen Afrika* (Auflage 2005).

freshwater resources for the different uses, they should always ‘take into account the objective of sustainable development’.<sup>61</sup>

Article 4 further elaborates on this obligation by requiring States to take into account certain principles when distributing freshwater resources among the different uses. Explicitly mentioned is the principle of equitable and reasonable use of the waters of the River, and the obligation to preserve the environment.<sup>62</sup> So both principles – equitable and sustainable use – are included.

In subsequent articles, we find more concrete commitments. Article 5 requires States to take into account the availability and continuity of the freshwater resources, and to ensure the sustainable maintenance of favourable ecological conditions in the river basin. Article 7 requires States to consider the preservation and protection of the environment when distributing water resources. Importantly, Article 6 emphasizes that the principles set out in Article 7 are secondary to the need to satisfy basic needs, and to ensure that reasonable satisfaction of all present-day water needs is possible. The treaty thus tries to find a balance between environmental considerations and immediate water needs of the present generation.

Article 4 refers explicitly to the principle of equitable use, further detailing it in the context of sustainable development. But one does not find all that many references to the no harm rule. Only in the Part on Protection and Environmental Preservation (Part 4) is there an interesting variation. Article 16 requires States to take measures to ‘prevent, reduce or control activities or conditions, resulting from natural causes or human activity, that may cause injury to other States, to the environment of the River, or to the health or safety of human beings’.<sup>63</sup> Clearly, this is yet another example of a more expansive version of the no harm rule, not limited strictly to harm caused by one State to the other.

### *Lake Tanganyika*

Another interesting example is the Convention on the Sustainable Management of Lake Tanganyika. According to its preamble, the Convention is motivated by a realization that ‘the riparian States share a common interest in the conservation and equitable utilization of the resources of Lake Tanganyika’. The principal objective is to ‘ensure the protection and conservation of the biological diversity and the sustainable use of the natural resources of Lake Tanganyika’.<sup>64</sup> To achieve this, the States must ‘accord particular attention to ensuring that present and future

<sup>61</sup> Charter of Senegal River Waters (2009) preamble.

<sup>62</sup> *Ibid.* at art. 4.

<sup>63</sup> *Ibid.* at art. 16. See also the definition of ‘pollution’, in Article 1(15). This is also defined beyond the transboundary context.

<sup>64</sup> Lake Tanganyika Convention (2008) art. 2(1).

communities living near the Lake benefit from the sustainable use of the Lake's natural resources'.<sup>65</sup> One of the Convention's general principles states that

the natural resources of Lake Tanganyika shall be protected, conserved, managed, and used for sustainable development to meet the needs of present and future generations in an equitable manner.<sup>66</sup>

Taken together, all these proclamations can lead to the conclusion that a better marriage between the principles of equitable use and sustainable use is hardly imaginable. The Convention also refers to the no harm rule. Article 6 asks all States to 'ensure that activities within their jurisdiction or control do not cause transboundary adverse impacts'. The latter term is defined as 'any adverse impact that extends beyond the territory of the Contracting State in which the physical origin of the adverse impact is situated'.<sup>67</sup> The term 'adverse impact' is defined in the Convention as follows:

Any actual or potential detrimental effect on the Lake's environment and any actual or potential consequential detrimental effect on legitimate uses of the Lake, on the health of the people of a Contracting State or on their ability to provide for their health, safety and cultural and economic well-being.<sup>68</sup>

Even in the definition of *transboundary* adverse impact, no reference to the interests of the other State is made. It only refers to impact felt beyond the State's own territory. At the same time, it requires some imagination to interpret this as a prohibition to cause harm to the State's own future generations as well.

### *Niger Basin*

From the Preamble of the Niger Basin Water Charter, it is clear that the agreement seeks to find an intergenerational balance between, on the one hand, promoting the economic and social progress of the States and contributing to the fight against poverty, and, on the other hand, ensuring sustainable development.<sup>69</sup>

<sup>65</sup> Ibid. at art. 2(2).

<sup>66</sup> Ibid. at art. 5(2).

<sup>67</sup> Ibid. at art. 1.

<sup>68</sup> Ibid.

<sup>69</sup> On the management of the Niger Basin, see e.g. M. Ngaide, 'La contribution de l'Afrique à la gestion des ressources en eau transfrontalières: l'exemple la Charte de l'eau du Bassin du Niger' (2012) 66 *Revue juridique et politique des États francophones* 263–316; K. Sangbana, 'Les gestion intégrée des ressources en eaux partagées et les organismes de bassin en Afrique: les cas de l'Autorité du Bassin du Niger et de l'Autorité du Bassin de la Volta', in *Société française pour le droit international, L'eau en droit international: Colloque d'Orléans* (Pedone 2011); U. Umoh, I. Ekpoh, and S. Kumar, 'Water Conflict in West Africa: The Niger River Basin Experience', in V. Grover (ed.), *Water: A Source of Conflict or Cooperation?* (Science Publishers 2007). For some background on earlier treaties, see e.g. T. Maluwa, 'Legal Aspects of the Niger River under the Niamey Treaties' (1988) 28 *Natural Resources Journal* 671–697; B.A. Godana, *Africa's*

The main objective of the Charter is to ‘encourage cooperation based on solidarity and reciprocity for a sustainable, equitable and coordinated use’ of the Niger Basin.<sup>70</sup> Article 4 further elaborates on the principle of equitable and reasonable use. Here a desire to come to an agreement on what is equitable towards future generations is also reflected. Factors to be taken into account include ‘past, present and future uses of the Basin’s water resources’, the ‘economic and social needs of the States and their populations’, and the ‘need to avoid wasteful use of the Basin’s waters’.<sup>71</sup> This is complemented *inter alia* by Article 12, which is entirely devoted to the preservation and protection of the environment.<sup>72</sup> On the other hand, Article 14, proclaims that the Basin’s water must be used in a ‘fair and equitable manner’ to meet the present-day needs for human consumption, agriculture, fisheries, industry, tourism, etc. This raises the question what comes first in case of water scarcity. On this, Article 15 says that, when not all uses can be satisfied at the same time, ‘particular attention must be paid to essential human needs’.

There is also a reference to the no harm rule, in Article 5, which reads as follows:

States Parties shall ensure that activities carried out within their territory cannot cause damage to other States Parties, in accordance with Article 4 of the Revised Convention establishing the Niger Basin Authority.<sup>73</sup>

The provision referred to in the last part of the sentence requires States to refrain from carrying out ‘any works likely to pollute waters or adversely modify the biological features of the fauna and flora’.<sup>74</sup> This could be interpreted as a more expansive interpretation of the no harm rule, not unlike the Revised Protocol on Shared Watercourses in the Southern African Development Community referred to above. The search for an intergenerational balance is also reflected in the definition of ‘integrated water resources management’, which is defined as

the process which encourages the coordinated development and management of water, land and related resources with a view to maximizing, in an equitable manner, the resulting economic and social welfare without compromising the sustainability of essential ecosystems.<sup>75</sup>

*Shared Water Resources: Legal and Institutional Aspects of the Nile, Niger and Senegal River Systems* (Pinter 1985).

<sup>70</sup> Niger Basin Water Charter, *supra* note 28 at art. 2.

<sup>71</sup> *Ibid.* at art. 4.

<sup>72</sup> See also Annex No. 1 on the Protection of the Environment of the Niger Basin, Annexed to the Niger Basin Water Charter (2008).

<sup>73</sup> Transboundary impact is defined as ‘any significant impact, such as the modification of the characteristics of transboundary waters caused by human activity’. *Ibid.* at art. 1(17).

<sup>74</sup> Convention révisée portant création de l’autorité du Bassin du Niger (Revised Convention Establishing the Niger Basin Authority) (29 October 1987) art. 4.

<sup>75</sup> Niger Basin Water Charter, *supra* note 28 at art. 1(15).

Interesting is also the definition of ‘pollution’:

Any change harmful to the composition or the quality of the water of an international watercourse resulting directly or indirectly from human behaviour, which is likely to cause harm to one or more watercourse States or their environment, including harm to the health or the safety of humans, or to any use of water, or to the biological resources of the watercourse.<sup>76</sup>

This definition is immediately followed by a definition of ‘transboundary pollution’, which reads that ‘any pollution which is caused by activities carried out on the territory or under the control of one State, and producing harmful effects to the environment of one or several other States’.<sup>77</sup> This brings pollution back within a transboundary context.

### *Guarani Aquifer*

The Guarani is an underground aquifer and, as such, the Watercourses Convention does not govern its utilization. A watercourse is defined in the Convention as ‘a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole’.<sup>78</sup> A system without surface waters is thus not covered by the Watercourses Convention. Reference must then be made here to the Draft Articles on the Law of Transboundary Aquifers prepared by the ILC in 2008.<sup>79</sup>

Article 4 of these articles contains a variation of the equitable utilization principle, applicable to transboundary aquifers. This is not a copy-paste from the Watercourses Convention because there is a big difference between surface water and groundwater. As the ILC explains, the Watercourses Convention deals with ‘renewable

<sup>76</sup> Ibid. at art. 1(25).

<sup>77</sup> Ibid. at art. 1(26).

<sup>78</sup> Watercourses Convention, *supra* note 4 at art. 2(a).

<sup>79</sup> ILC, Draft Articles on the Law of Transboundary Aquifers, with Commentaries, adopted by the International Law Commission at its sixtieth session (2008), UN Doc. A/63/10. See e.g. O. McIntyre, ‘International Water Resources Law and the International Law Commission Draft Articles on Transboundary Aquifers: A Missed Opportunity for Cross-Fertilisation?’ (2011) 13:3 *International Community Law Review* 237–254; N. Sánchez Castillo, ‘Differentiating between Sovereignty over Exclusive and Shared Resources in the Light of Future Discussions on the Law of Transboundary Aquifers’ (2015) 24 *Review of European, Comparative and International Environmental Law* 4–15; A. Tanzi and A. Kolliopoulos, ‘The International Water Law Process and Transboundary Groundwater: Supplementing the Water Convention with the 2012 UNECE Model Provisions’, in A. Tanzi, *The UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes* (Brill 2015); G. Eckstein and F. Sindico, ‘The Law of Transboundary Aquifers: Many Ways of Going Forward, but Only One Way of Standing Still’ (2014) 23 *Review of European, Comparative and International Environmental Law* 32–42; J.W. Dellapenna, ‘The Law of Transboundary Groundwater’, in L. Westra and M. Vilela, *The Earth Charter, Ecological Integrity and Social Movements* (Routledge 2014); R. Frink, ‘Preserving Trans-Boundary Aquifers: A Precious Resource for Our Future Generations’ (2013) 26 *Pacific McGeorge Global Business and Development Law Journal* 503–530.

waters which receive substantial recharge and in that context the principle of sustainable utilization fully applie[s]'; whilst 'the waters in aquifers, whether recharging or non-recharging, are more or less non-renewable', and thus one cannot expect of the present generation to leave these waters in the same shape – in terms of quality and quantity – as it found them. The objective is more modest: *inter alia*, to 'aim at maximizing the long-term benefits derived from the use of water contained [in the aquifer]', to 'tak[e] into account present and future needs of, and alternative water sources for, the aquifer States', and 'not [to] utilize a recharging transboundary aquifer or aquifer system at a level that would prevent continuance of its effective functioning'.<sup>80</sup>

Article 6 sets out the obligation not to cause significant harm. It basically obliges one Aquifer State to take all appropriate measures to prevent the causing of significant harm to other Aquifer States.<sup>81</sup> Article 12, on pollution, follows the same model: it obliges Aquifer States to prevent, reduce, and control pollution of the transboundary aquifers or aquifer systems situated on their territory that may cause significant harm to other Aquifer States.<sup>82</sup>

From the above, it can be concluded that the principle of equitable utilization and the no harm rule also govern the exploitation and management of transboundary aquifers. Let us now turn to the Guarani Aquifer Agreement, and see how these two foundational principles of international water law are linked to intergenerational equity. In the Preamble, the States acknowledge they are 'conscious of the responsibility to promote the sustainable development [of the Guarani Aquifer System] for the benefit of present and future generations'.<sup>83</sup> This is a very explicit reference to the interests of future generations. So how does this approach affect the interpretation of the principles?

In Article 3, there is a pledge by each State to use the Guarani Aquifer's resources 'on the basis of reasonable and sustainable uses criteria, respecting the obligation of

<sup>80</sup> Draft Articles on the Law of Transboundary Aquifers, *supra* note 79 at commentary to art. 4, para. (4).

<sup>81</sup> *Ibid.* at art. 6.

<sup>82</sup> *Ibid.* at art. 12.

<sup>83</sup> Guarani Aquifer Agreement, *supra* note 29 at preamble. On the Agreement, see e.g. C. Tinker, 'The Guarani Aquifer Accord: Cooperation in South America towards Prevention of Harm and Sustainable, Equitable Use of Underground Transboundary Water' (2016) 15:2 *Law and Practice of International Courts and Tribunals* 249–263; F. Sindico and S. Hawkins, 'The Guarani Aquifer Agreement and Transboundary Aquifer Law in the SADC: Comparing Apples and Oranges?' (2015) 24 *Review of European, Comparative and International Environmental Law* 318–329; L. del Castillo-Laborde, 'The Guarani Aquifer Framework Agreement (2010)', in L. Boisson de Chazoumes, C. Leb, and M. Tignino (eds.), *International Law and Freshwater: The Multiple Challenges* (Elgar 2013); D. Cassuto and R. Sampaio, 'Hard, Soft and Uncertain: The Guarani Aquifer and the Challenges of Transboundary Groundwater' (2013) 24 *Colorado Journal of International Environmental Law and Policy* 1–41; B. Green, 'Contemporary Governance of Transboundary Groundwater Resources: The Guarani Aquifer Project' (2010) 21 *Journal of Water Law* 232–240.

not causing significant harm to the other Parties or the environment'. The latter three words are interesting, as they provide room for an intergenerational interpretation of the no harm rule. Article 6 complements this provision by requiring that the States 'adopt all the necessary measures to avoid causing significant harm to the other Parties or the environment' when utilizing the water resources of the Guarani Aquifer System.<sup>84</sup>

Article 4 contains a reference to equitable utilization, worded as follows: 'The Parties shall promote the conservation and environmental protection of the Guarani Aquifer System so as to ensure multiple, reasonable, sustainable, and equitable use of its water resources.' Clearly, equitable use is closely linked to sustainable use here, and thus there is plenty of support for an intergenerational interpretation of the equitable use principle.

### *Rivers of Kazakhstan and China*

In February 2011, Kazakhstan and China signed an Agreement on water quality protection of transboundary waters.<sup>85</sup> In the preamble, the two States acknowledge 'their responsibility to present and future generations for the preservation of the aquatic environment, the protection of transboundary rivers from pollution and the protection of the water quality of transboundary rivers'.<sup>86</sup> The fact that this obligation is owed to both present and future generations should be emphasized here.

But how to balance the interests between the different generations? Must this be done on the basis of equity? The Agreement contains no explicit reference to the principle of equitable utilization, but it does have multiple references to the no harm rule, or the rule obliging States to prevent transboundary impact. The latter term is defined in the agreement in a traditional sense, i.e. as an obligation to try and avoid harmful effects felt on the territory of one Party caused by activities that take place in the territory of the other Party.<sup>87</sup>

## FUTURE GENERATIONS IN DOMESTIC WATER LAW

References to the interests of future generations in the utilization of freshwater resources can also be found in the domestic law of various States. In this section,

<sup>84</sup> See also Guarani Aquifer Agreement, *supra* note 29 at art. 7.

<sup>85</sup> More in general about water agreements between Kazakhstan and its neighbours, see e.g. N. Kipshakbaev, 'Cooperation of the Republic of Kazakhstan with Adjoining States on Transboundary Water Issues', in UNECE, *Transboundary Water Cooperation: Trends in the Newly Independent States* (UN 2006).

<sup>86</sup> Agreement between Kazakhstan and China, *supra* note 30 at preamble.

<sup>87</sup> *Ibid.* at art. 2.

a selection of more recent examples of such domestic legislation is offered.<sup>88</sup> The examples have been selected in such a way as to show the great variety of States involved.<sup>89</sup> For example, the first provision of the recently adopted Austrian Federal Constitutional Act on Sustainability states that

the Republic of Austria is committed to the principle of sustainability in using natural resources to ensure that future generations will also benefit from optimal quality of life.<sup>90</sup>

The word ‘also’ indicates the commitment to search for a balance in order to ensure an optimal quality of life for both present and future generations.

One of the principal objectives of the recently adopted Water Law of the Central African Republic is to:

Mobilize and manage water resources, to ensure the conditions for sustainable development, through rational use, while preserving the interest of current and future generations.<sup>91</sup>

Article 36 of the Congolese law on the planning and development of the territory and its natural resources proclaims that

the exploitation of natural resources must take into account the indispensable preservation of the environment, so as to meet the needs of present and future generations.<sup>92</sup>

The new Land Law of the Macao Special Administrative Region of the People’s Republic of China, adopted in 2013, refers to the principle of sustainability as requiring a ‘coordinated and balanced’ development policy:

... so as to ensure meeting the needs of the present generation whilst transmitting to the future generations a properly planned and ordered region.<sup>93</sup>

The Code of the Environment in Burkina Faso calls for sustainable production and consumption, defined as

<sup>88</sup> Not all examples apply to the utilization of freshwater resources alone. Examples of domestic environmental law applicable *inter alia* to freshwater resources – but also to other natural resources – are also included.

<sup>89</sup> For more examples, see e.g. Brown Weiss, *supra* note 2 at 10–11.

<sup>90</sup> Federal Constitutional Act on Sustainability, Animal Protection, Comprehensive Environmental Protection, on Water and Food Security as well as Research, adopted 11 July 2013, para. 1 [www.ris.bka.gv.at/Dokumente/Erw/ERVV\\_2013\\_1\\_111/ERVV\\_2013\\_1\\_111.html](http://www.ris.bka.gv.at/Dokumente/Erw/ERVV_2013_1_111/ERVV_2013_1_111.html) accessed 30 November 2017.

<sup>91</sup> Water Law of the Central African Republic (2006) art. 2 <http://faolex.fao.org/docs/pdf/cafi07433.pdf> accessed 30 November 2017.

<sup>92</sup> Law No. 43-2014 of 10 October 2014, on the Planning and Development of the Territory (2014) art. 36 <http://faolex.fao.org/docs/pdf/con143310.pdf> accessed 30 November 2017.

<sup>93</sup> Land Law of the Special Administrative Region of Macau, Law No. 10/2013, art. 2(1) (2013) <http://images.io.gov.mo/bo/i/2013/36/lei-10-2013.pdf> accessed 30 November 2017.

mechanisms of production and use of goods and services that meet basic needs, and contribute to improving the quality of life, while minimizing the use of natural resources, so as not to endanger needs of future generations.<sup>94</sup>

The same Code also makes explicit reference to the principle of sustainable development, according to which ‘the present generation should meet its needs without compromising the ability of future generations to meet their own needs’.<sup>95</sup> And ‘natural resources which contribute to the satisfaction of human needs must be exploited to meet the needs of the present generation without compromising the ability of future generations to meet their own needs’.<sup>96</sup>

Article 112 of the Norwegian Constitution reads as follows:

Every person has the right to an environment that is conducive to health and to a natural environment whose productivity and diversity are maintained. Natural resources shall be managed on the basis of comprehensive long-term considerations which will safeguard this right for future generations as well.<sup>97</sup>

Finally, a very interesting example is the Maltese Sustainable Development Act, which includes the following provision:

There shall be a Guardian of Future Generations with the aim of safeguarding intergenerational and intragenerational sustainable development in Malta.<sup>98</sup>

This Guardian has the mandate to, *inter alia*, ‘direct the focus of the competent authority to safeguard future generations’.<sup>99</sup> This reminds one a bit of the Hungarian Parliamentary Commissioner for Future Generations, a position established in 2008 and replaced by a Deputy Commissioner for Fundamental Rights responsible for the protection of the interests of future generations in 2012.<sup>100</sup> A handful of States have established similar institutions.<sup>101</sup>

With the exception of the above-mentioned examples, future generations do not play a role in the process of utilizing a State’s freshwater or other natural resources.

<sup>94</sup> Environmental Code of Burkina Faso, Law No 006-2013 (2013) art. 4 [www.assembleenationale.bf/IMG/pdf/loi\\_n0006\\_portant\\_code\\_de\\_l\\_environnement.pdf](http://www.assembleenationale.bf/IMG/pdf/loi_n0006_portant_code_de_l_environnement.pdf) accessed 30 November 2017.

<sup>95</sup> *Ibid.* at art. 9.

<sup>96</sup> *Ibid.* at art. 18.

<sup>97</sup> Translation available at [www.stortinget.no/globalassets/pdf/english/constitutionenglish.pdf](http://www.stortinget.no/globalassets/pdf/english/constitutionenglish.pdf) accessed 30 November 2017.

<sup>98</sup> Maltese Sustainable Development Act (Chapter 521), Act X of 10 July 2012, pt. IV, art. 8 <http://justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=11917&l=1> accessed 30 November 2017.

<sup>99</sup> *Ibid.* at arts. 8, 4, j.

<sup>100</sup> See Hungarian Act LIX of 1993 on the Parliamentary Commissioner for Civil Rights (Ombudsman), provision 27; Hungarian Act CXI of 2011 on the Commissioner for Fundamental Rights, as amended by Act CCXXIII of 2013, ch. I, sec. 3 [www.ajbh.hu/en/web/ajbh-en/act-cxi-of-2011](http://www.ajbh.hu/en/web/ajbh-en/act-cxi-of-2011) accessed 30 November 2017. See also ch. 4 in this volume.

<sup>101</sup> See Brown Weiss, *supra* note 2 at 11–13.

Instead, those participating in this process in the present are obligated not to endanger or compromise the interests of future generations in the same freshwater resources.

## FUTURE GENERATIONS IN DOMESTIC WATER PLANS AND POLICIES

Many national water resource plans and policies also increasingly refer to the interests of future generations. It is interesting to examine how this balance is sought in various cases.

An early example is the national water policy of Bangladesh, adopted in 1999. This policy begins with the following proclamation:

Every public agency, every community, village and each individual has an important role to play in ensuring that the water and associated natural resources of Bangladesh are used judiciously so that the future generations can be assured of at least the same, if not better, availability and quality of those resources.<sup>102</sup>

Here, the balance between the benefits and burdens of freshwater resources utilization tilts in favour of the future generations, which is somewhat unusual. There are very few examples of such an approach.

It is also difficult to surpass the Bangladeshi formulation in terms of clarity and specificity. But the National Water Sector Strategy and Investment Program of Yemen, adopted in 2004, clearly surpassed the Bangladeshi report in the urgency with which the protection of the interests of future generations was described. The various working groups that prepared this strategy began from a series of considerations, one of which was that

exhausting and wasting or polluting water is considered a criminal act, contravening all religions and can almost be considered an act of terror against the rights of present and future generations.<sup>103</sup>

Here, the act of unsustainable exploitation of freshwater resources is condemned in extremely strong terms, but this in itself does not mean the interests of future generations are preferred over those of the present.

The Ghanaian National Water Policy of 2007 is a more cautiously formulated example. Its overall goal is to

<sup>102</sup> National Water Policy, published in 1999 by the Ministry of Water Resources of the Government of the People's Republic of Bangladesh, 4 <http://faolex.fao.org/docs/pdf/bgd146075.pdf> accessed 30 November 2017.

<sup>103</sup> National Water Sector Strategy and Investment Program (NWSSIP) of Yemen, published in December 2004 by the Ministry of Water and Environment, 3 [www.yemenwater.org/wp-content/uploads/2013/05/NWSSIP\\_2004\\_English1.pdf](http://www.yemenwater.org/wp-content/uploads/2013/05/NWSSIP_2004_English1.pdf) accessed 30 November 2017.

achieve the sustainable development, management and use of Ghana's water resources, to improve health and livelihoods, reduce vulnerability, while assuring good governance for present and future generations.<sup>104</sup>

If the reference to future generations refers back only to good governance, then this quote says little about the exact intergenerational balance of burdens and benefits.

A Croatian regulation referred, in 2008, to the principle of sustainable development, according to which water should be managed in such a way as to

meet the needs of the present generation without compromising the right and ability of future generations to realize their needs for themselves.<sup>105</sup>

One clearly sees the Croatian authorities took their inspiration from the Brundtland report.

The National Action Plan for Integrated Management of Water Resources of Cape Verde, adopted in November 2010, also advocated for sustainable development, interpreted as an

economic and social policy that respects the environment, is specifically focused on the prudent and rational utilization of natural resources and respect for safeguarding the interests of future generations.<sup>106</sup>

In the same year, the Water Conservation Strategy of the United Arab Emirates was adopted. This strategy identified eight initiatives that needed to be implemented, of which the first was to

develop legislation, standards and Federal mechanisms for integrated water resources management [in order to] preserve, protect and enhance water resources management in UAE, and to appropriately allocate and effectively use water resources for the benefit of current and future generations.<sup>107</sup>

And finally, the Guatemalan National Plan of 2014 identified five axes of importance, of which the fourth was this:

The development of a natural resources plan for today and for the future [requiring, *inter alia*, the] sustainable management of lake and river systems.<sup>108</sup>

<sup>104</sup> National Water Policy, adopted in 2007 by the Ghanaian Ministry of Water Resources, Works and Housing, 19 [www.purc.com.gh/purc/sites/default/files/WATERPOLICY.pdf](http://www.purc.com.gh/purc/sites/default/files/WATERPOLICY.pdf) accessed 30 November 2017.

<sup>105</sup> Croatian Regulation on the water management strategy, published 15 July 2008 <http://faolex.fao.org/docs/texts/cro129713.doc> accessed 30 November 2017.

<sup>106</sup> National Action Plan for Integrated Water Resources Management of Cape Verde, annexed to resolution No. 66/2010 of 24 November 2010, 33 <http://faolex.fao.org/docs/pdf/cvi119727.pdf> accessed 30 November 2017.

<sup>107</sup> United Arab Emirates, Water Conservation Strategy (2010) 68 <http://faolex.fao.org/docs/pdf/uae147095.pdf> accessed 30 November 2017.

<sup>108</sup> See Plan Nacional de Desarrollo K'atun: nuestra Guatemala 2032 (2004) 12–13, 59, 239–295 <http://faolex.fao.org/docs/pdf/gua143736.pdf> accessed 30 November 2017.

There are many other examples of water plans and policies which make reference to future generations, such as the Panamanian National Water Resources Policy, adopted 23 April 2013,<sup>109</sup> and the Sustainable and Integrated Water and Sanitation Policy 2012–2021 of Tuvalu.<sup>110</sup> All of these plans seek to give meaning to the intergenerational equity principle in their own way by searching for an acceptable distribution of burdens and benefits between present and future generations.

## CONCLUSION

This chapter first examined the relationship between the principle of intergenerational equity and the two most fundamental principles of international water law – the no harm rule and the principle of equitable utilization – as reflected in the UN Watercourses Convention. It then looked at how this relationship between intergenerational equity and water law’s foundational principles played out in specific agreements regulating a particular transboundary watercourse. Many of these agreements use the Watercourses Convention’s proclamation of the principles as starting point, but then add more intergenerational elements to them. It appears that States are more and more confident in doing so, and thus the principles slowly evolve into more sustainable, intergenerational versions of themselves.

We also see this evolution in domestic law and policies. All examples referred to above have attempted to find a way to share the burdens and benefits of freshwater resource management and utilization among the present and future generations. The exact formulation of this balance differs. Sometimes the present generation has an obligation to ensure that future generations have at least as many resources and opportunities as the present generation currently has. Sometimes the present generation is asked only to keep the interests of future generations in mind when utilizing the freshwater resources. Very few legal frameworks give a role to representatives of future generations as participants. It is more common for the present generation to simply accept an obligation for itself to take into account the interests of future generations, without giving the latter any means to ensure compliance with this commitment. If we take all these examples together, we find an interesting laboratory of intellectual experiments, most of them of very recent date, which may provide a source of inspiration. The question of how to ensure compliance with these water laws remains beyond the scope of this chapter, but the next step is to faithfully carry out those plans and to respect the commitments that have been made to present and future generations.

<sup>109</sup> Panamanian National Water Resources Policy (2013) <http://faolex.fao.org/docs/pdf/pam123087.pdf> accessed 30 November 2017.

<sup>110</sup> Adopted by the Office of the Deputy Prime Minister and Ministry of Public Utilities in 2012 <http://faolex.fao.org/docs/pdf/tuv143758.pdf> accessed 30 November 2017. Faolex is a legislative database with domestic laws and regulation relating to renewable natural resources. It has an excellent collection, which is easily searchable.