

Application of Principle of Sustainable Development in Governing Transboundary Water Pollution

Yilin Zhang¹

¹ Wuhan University China Institute of Boundary and Ocean Studies, Wuhan, China

Correspondence: Yilin Zhang, Wuhan University China Institute of Boundary and Ocean Studies, Wuhan, China.

doi:10.56397/LE.2023.04.07

Abstract

International water law, based on the two major water conventions, imposes two main obligations of due diligence and cooperation on the complicated issue of governing transboundary water pollution. Meanwhile, principles of sustainable development, as one of the basic principles of international environmental law, are reflected in international water law documents. The practice of preventing, controlling and reducing transboundary water pollution under international water law explains the implications of equity and continuity under principles of sustainable development. Furthermore, advancing cooperation in transboundary water pollution governance also contributes to the achievement of Sustainable Development Goals stipulated in the 2030 Agenda for Sustainable Development.

Keywords: transboundary water, principle of sustainable development, international water law, water pollution

1. Introduction

37 serious water conflicts in total have taken place around the world since 1948.¹ Till now, around two-thirds of the transboundary waters on the earth still have no cooperative management mechanisms. The pollution of the Rhine occurred in 1986 negatively affected the river ecology and caused a great inconvenience to people's life along the watercourse in Western Europe. In 2004, a large amount of sewage leaked from a cesspool in Romania, then it flew into the Danube River, leaving the quality of drinking water and the balance of the ecological environment around the Danube basin at risk. In 2005, the pollution of the Songhua River in China had a hugely detrimental impact on the basin, and the pollutants were found both in the northwest of China and in the far east of Russia. The far-reaching environmental impact of transboundary water pollution poses a challenge for the basin countries to build environmental pollution governance mechanisms. So far, the international water law, of which the form is embodied in the Convention on the Law of the Non-navigational Uses of International Watercourses (hereinafter referred to as "the Watercourses Convention") and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (hereinafter referred to as "the UNECE Water Convention"), provides a legal basis for the international watercourses governance, especially on the pollution prevention and control. Nevertheless, 129 countries in the world still have no governance mechanism designs for integrated water resources management by 2020.² This paper focuses on how to integrate the principles of sustainable development into the mechanisms of transboundary water pollution governance between countries or among countries, and then explores the practical approach of adding the concept of sustainable development to transboundary water pollution governance.

2. Requirements on Transboundary Water Pollution Prevention and Control Under the International Water Law

The Watercourses Convention entered into force in 2014. Two years later, the UN Economic Commission for Europe decided to open the UNECE Water Convention to all UN members. The era of two global water

conventions operating in parallel has started since then. The two water conventions reflect the current status of the customary law in the protection of international watercourses, establishing fundamental legal principles and the basic legal framework for the prevention and control of transboundary water pollution.

2.1 The Watercourses Convention

The Watercourses Convention is the first global convention to develop, utilize and protect international watercourses which is a landmark in the history of international water law. Art. 21 of the Watercourses Convention defines “pollution of an international watercourse”. It obliges the States along the watercourse under the obligation of due diligence to avoid causing significant harm to the environment and provides a non-exhaustive obligation list of consultation among watercourse States to prevent and control watercourse pollution. According to the principles and rules under the Watercourses Law Convention, watercourse States have two main obligations on the issue of the prevention and control of transboundary water pollution.

2.1.1 Due Diligence

In short, the obligation of due diligence can be seen in the Watercourses Convention as “Watercourse States shall, individually and, where appropriate, jointly, prevent, reduce and control the pollution of an international watercourse that may cause significant harm to other States or to their environment (Art. 21).” Due diligence means to prevent the potential pollution and to address the pollution after the contamination occurs. In terms of ex-ante prevention, watercourse States shall make equitable and reasonable use of international watercourses within their territories and prevent causing significant harm to other watercourse States (Art. 7), and watercourse States shall participate in the use, development, and protection of an international watercourse in an equitable and reasonable manner (Art. 5). Once the transboundary waters are utilized and developed by a certain watercourse State, the effects on other States shall be taken into account during the preparation and operation process (Art. 6). In terms of ex-post treatment, the State causing the pollution of transboundary water is obliged to take measures to eliminate or mitigate the pollution and, where appropriate, to discuss the compensation for the pollution which do significant harm to the watercourse (Art. 7).

2.1.2 Cooperation

The cooperation obligation under Art. 21 of the Watercourses Convention is to consult with watercourse States on the prevention and control of pollution, including but not limited to the setting of water quality standards, the determination of collective pollution treatment measures, the restriction of lists of prohibited pollutants, etc. (Art. 21). Furthermore, the obligation of cooperation between watercourse States under the Watercourses Law Convention are also reflected in the cooperation in the establishment of joint bodies (Art. 8), the regular exchange of data and information (Art. 9), the consultation and negotiation of planned measures (Art. 11), and the notification of planned measures that may have adverse effects (Art. 12). The watercourse States shall also cooperate to communicate policies when ensuring the reasonable use of transboundary waters (Art. 6).

2.2 The UNECE Water Convention

The subject matter of the UNECE Water Convention is the same as the Watercourses Convention. The two conventions are compatible with each other. The provisions of the UNECE Water Convention are more specific, providing clear guidelines and more advanced conduct standards, particularly concerning the prevention, control, and reduction of transboundary impacts. The Watercourses Convention provides more guidance on the principle of equitable and reasonable utilization, while the UNECE Water Convention set up an institutional framework to force its member states to comply with its provisions and to develop institutional cooperation mechanisms among the basin States. This attaches an additional value to the UNECE Water Convention.³ The differences between the UNECE Water Convention and the Watercourses Convention on the prevention and control of transboundary water pollution are highlighted below.

2.2.1 General Requirements for Prevention, Control, and Reduction of Water Pollution

The UNECE Water Convention directly identifies the principles that the Contracting Parties should follow in the prevention and control of transboundary water pollution, namely the precautionary principle, the polluter-pays principle, and the sustainable development principle (Art. 2). The Convention attaches greater importance to improving wastewater disposing technologies at source and monitoring wastewater discharge processes to prevent, control and reduce transboundary water pollution (Art. 3), and therefore emphasizes the need for the Contracting Parties to strengthen their cooperation in the research and development of effective technologies for the transboundary water pollution (Art. 5).

2.2.2 Specific Obligations on Bilateral and Multilateral Cooperation

In addition to the obligations of notification, consultation, and exchange of information, basin States are obliged to cooperate in terms of the establishment of joint bodies and the conduct of joint monitoring and assessment. On the one hand, transboundary water basin states shall establish bilateral or multilateral cooperation mechanisms

on the basis of equality and reciprocity, including the establishment of joint institutions to monitor pollution sources and implement environmental impact assessments (Art. 9). On the other hand, basin States shall establish cooperation mechanisms to assess the effectiveness of measures taken for transboundary water pollution and to regularly monitor the conditions of transboundary waters (Art. 11).

3. Principle of Sustainable Development and the International Water Law

The principle of sustainable development is one of the basic principles of international environmental law, of which the contents include intra-generational equity, inter-generational equity, sustainable use, and the integration of environment and development. As international water law is a branch of international environmental law, the principle of sustainable development naturally applies to the system of international water law, which is embodied in the two water conventions and many regional water management treaties.⁴

3.1 The Establishment of the Principle of Sustainable Development in the International Environmental Law

The concept of “sustainable development” first appeared in a report named “Our Common Future” in 1987. The developing principle of sustainable development has not acquired the legal status of international customary law. However, it is becoming the guideline in the field of international environmental law and could apply to all sectors of international environmental law. With an increasing number of international environmental arrangements recognizing the importance of the sustainable development principle, it becomes an indispensable part of the foundation of international environmental law. It could be found in global arrangements, like the *International Convention for the Regulation of Whaling*,⁵ and the *Convention on Biological Diversity*,⁶ the *United Nations Framework Convention on Climate Change*.⁷ It also could be found in the soft laws, like the *Stockholm United Nations declaration of the human environment*,⁸ and the *Rio Declaration on Environment and Development*.⁹ In the jurisprudence of international courts, the principle of sustainable development is a necessary factor in reconciling the conflicts between environment and economic development. In the *Pulp Mills case*, the ICJ holds that the reasonable use of the river should allow sustainable development, and it should take both the sustainable protection of the basin environment and the economic development right of the basin States into consideration.¹⁰ The final decision reflects that the State, with no breaches of the obligation of environmental protection, has the legitimacy and freedom to develop its economy.

3.1.1 The Principle of Sustainable Development in the International Water Law

It is worth noting that the principle of sustainable development in international water law is to provide a legal framework for watercourse states to reconcile conflicts over the utilization of waters. It concentrates on the integral management of water resources, including the unified management in one basin, the coordinated management of multiple sectors, and the comprehensive consideration of multi-dimensional interests.

Sustainable development in the context of the Watercourse Convention means protecting the environment of watercourses, especially with due diligence not to do significant harm to the watercourses. To realize the optimal and sustainable use of the watercourses, the principle of equitable and reasonable use established in the Watercourses Law Convention requires the conservation and protection of watercourses, which is one of the factors in determining whether the State conducts the activities in an equitable and reasonable way or not. The principle of non-significant harm, which requires the watercourse State to prevent significant transboundary impacts when utilizing an international watercourse within its territory, also applies to the governance of international watercourse pollution. Watercourse States are obliged to protect and preserve the ecosystem of the international watercourses and, where appropriate, to cooperate with other States. The management of an international watercourse requires a plan for the sustainable development of the watercourse and then implement that plan. The obligation of planning is essential to ensure the interests of the present and future generations. Furthermore, the procedural regime in the Watercourses Convention guarantees the realization of the substantive provisions under the Convention, such as the regular exchange of data and information, the prior notification and consultation on planned measures, and the dispute settlement mechanism. It facilitates the watercourses exploitation activities conducted by the basin States and also provides a channel for the timely settlement of potential water conflicts among the watercourses States.

The UNEEC Water Convention pinpoints the principle of sustainable development. Based on the precautionary principle, the polluter-pays principle, and the principle of sustainable development, the watercourse States are obliged to prevent and control water pollution, manage and preserve the watercourses environment, reach an equitable and reasonable use of transboundary watercourses, protect and restore the basin ecosystem, and strengthen the cooperation among the basin States to promote the sustainable management of water resources. The Convention defines the “transboundary impact” as the significant adverse impact on the environment, which extends to the field of geography, cultural heritage, and socio-economic conditions, and is closely interlinked with the environmental, social, and economic requirements in the context of sustainable development.

The principle of sustainable development could be found in certain basin cooperation mechanisms which have

been established by States with transboundary rivers. In Europe, to realize the sustainable use of the Danube, the *Convention on the Protection of the Danube* focuses on the prevention and reduction of transboundary impacts caused by water pollution. It emphasizes the cooperation on sustainable management of waters to guarantee the water interests of the Danube basin States.¹¹ In Asia, the four riparian countries of the Lower Mekong (Thailand, Cambodia, Vietnam, and Laos) concluded the *Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin* in 1995, which stipulated substantive and procedural rules and designed the mechanism for cooperation in all areas of the sustainable development, use, management, and conservation of water and related resources in the Mekong River Basin.¹² In Africa, the Southern African Development Community (SADC) adopted the *Revised Protocol on Shared Watercourses* in 2000 to develop close cooperation for judicious, sustainable, and coordinated utilization of the resources of the shared watercourses in the SADC Region.¹³ In South America, the *Amazon Cooperation Treaty* is concluded to promote harmonious development in the Amazon region. The parties shall enhance the ecological protection of the Amazon region and then create conditions to accelerate the economic and social development of this region.¹⁴

3.2 Links Between the Principle of Sustainable Development and the Prevention and Control of Transboundary Water Pollution

3.2.1 Equity and the Obligation of Due Diligence

Equity under the principle of sustainable development requires the basin States to properly cope with water pollution to achieve intra- and inter-generational equity in the transboundary basin. With regard to intra-generational equity, the development of one State in the transboundary basin should not be at the expense of the development of other countries in the same basin. To realize the sustainable use of transboundary waters, it requires that transboundary basin states should exercise due diligence to preserve and protect basin ecosystems while ensuring social development and economic prosperity, and to prevent significant transboundary damage when utilizing the transboundary waters. On the one hand, basin states should prevent transboundary water pollution and protect the ecological environment within their territories, as well as set standards to prevent and control water pollution at source; on the other hand, basin states should actively take measures to reduce and eliminate water pollution when an incident occurs, restore the basin ecosystem, avoid significant impacts on other basin states caused by pollution to the maximum extent possible, and compensate for the water pollution if necessary. With regard to intergenerational equity, States in transboundary basins should consider the development capacity of their future generations. It requires basin States to make longer-term plans on realizing the sustainable development of transboundary waters so that the pollution caused by human beings could be kept within the self-recovery capacity of waters. Cooperation for the sustainable management of transboundary waters is needed to ensure intergenerational equity for the survival and development of residents, which is also the meaning of sustainability under the principle of sustainable development.

3.2.2 Sustainability and the Obligation of Cooperation

Sustainability means maintaining a balance between economic and social development and the carrying capacity of the environment, so as to achieve sustainable development of human beings and the earth. One of the controversies on the sustainable development of transboundary waters is how to keep the fragile balance between the development rights of upstream underdeveloped countries and the environmental protection needs of downstream developed countries. The key to settling this conflict lies in negotiation. The outcome of the negotiation is expected to ensure the benefits of the upstream and downstream countries. An ideal cooperation model is that upstream countries export goods or energies to downstream countries by increasing their production capacity, and the downstream countries provide technical assistance to the upstream countries on reducing water pollution, thus achieving a win-win situation. To avoid zero-sum games, the integration of environment and development in basin States needs cooperation, like establishing a mechanism for the sustainable use of water resources, to meet the needs of economic and social development within the carrying capacity of the basin ecosystem. On the one hand, basin states shall actively assume their obligations under the international water law, such as regular consultation, notification and information exchange, and regular environmental monitoring and assessment of watercourses; on the other hand, joint bodies shall be established to promote cooperation between upstream and downstream states on the reasonable use of water resources, in pursuit of common development.

3.2.3 Combination Sustainable Development Goals with Prevention and Control of Transboundary Water Pollution

The 17 Sustainable Development Goals (SDGs) adopted at the UN Sustainable Development Summit in 2015 perform a guide to the 2030 Agenda for Sustainable Development.¹⁵ The SDGs play an indispensable role in governing transboundary water pollution. Goal 6, Clean Water and Sanitation, is relevant to the sustainable use of water resources. As discussed above, the targets under Goal 6 — reducing pollution corresponds to the obligation of due diligence; integrated water resources management at all levels responses to the obligation of

cooperation; the protection and restoration of water-related ecosystems link to the sustainable use of water; international cooperation and capacity-building support to developing countries answer the integration of environment and development. The 2021 Sustainable Development Report shows that by 2020, 58% of transboundary basin areas have institutional arrangements for water cooperation, and the average implementation rate of integrated water resources management at the global level is 54%.¹⁶ According to the latest SDG progress, countries and regions are currently facing challenges in achieving Goal 6 such as water scarcity, water pollution, degradation of water-related ecosystems, and lack of cooperation on transboundary waters. In the future, the basin States still need to bring out an integrated and comprehensive approach to water resources management.¹⁷

4. Conclusion

Water pollution could exert a negative influence on the basin environment, even threatening the normal order of living and production of riparian countries. This paper discusses how to integrate the principle of sustainable development into the arrangements for the prevention and control of transboundary water pollution. The principle of sustainable development is reflected in international water law. Equity under the principle of sustainable development requires watercourse States to take measures to prevent, control, and reduce transboundary water pollution, while sustainability under the principle of sustainable development requires watercourse states to utilize transboundary waters in a sustainable way and cooperate with other basin states to achieve sustainable management of water resources. Based on international rules, this paper examines the principle of sustainable development in the prevention and control of transboundary water pollution. The principle of sustainable development in the prevention and control of transboundary water pollution would face new challenges due to climate change.

References

- Atapattu, S., (2007). Emerging principles of international environmental law. Brill.
- Bai Minghua, (2014). Research on International Cooperation Law of Transboundary Water Resources. University of International Business and Economics.
- Guo Dongmei, Zhang Li, (2011). Analysis of the rights and obligations of upstream and downstream states in transboundary basins. *Environment and Sustainable Development*, 36(06), 65-70.
- He Yanmei, (2020). Transnational watershed management system under the adjustment of international water law. *Boundary and Ocean Studies*, 5(06), 53-79.
- Li Xinlei, (2016). Conflict or cooperation: pathways and mechanisms of transnational river water governance. *Foreign Affairs Review (Journal of Foreign Affairs Institute)*, 33(01), 126-152.
- Park, Jianyi, Li, Zhifei, (2013). Water cooperation management: A new issue in the construction of Lancang-Mekong regional relations. *Southeast Asia Studies*, (05), 27-35.
- Rahaman, M.M., (2009). Principles of international water law: creating effective transboundary water resources management. *International Journal of Sustainable Society*, 1(3), pp. 207-223.
- Segger, M.C.C. and Khalfan, A., (2004). Sustainable development law: principles, practices, and prospects. OUP Catalogue.
- Spijkers, O., (2016). The Cross - fertilization between the Sustainable Development Goals and International Water Law. *Review of European, Comparative & International Environmental Law*, 25(1), pp. 39-49.
- Wu Qian, (2021). The construction of a new order of international water law under the concept of community of human destiny. *Journal of China University of Geosciences (Social Science Edition)*, 21(02), 52-64.
- Xie YG, Wang JL, Pan JJ., (2013). Exploring the cooperation mechanism of cross-border water pollution disasters and regional disaster mitigation between China and Russia. *Northeast Asia Forum*, 22(04), 82-91+129.
- Yu Yuanling, (2011). Study on the legal mechanism of China-ASEAN international river protection cooperation. Chongqing University.
- Zhao Hongmei, (2014). Study on the legal mechanism of transboundary water pollution prevention and control in the Lancang-Mekong River Basin. Kunming University of Technology.
- Zheng Wenlin, (2013). Study on civil liability for environmental torts in international waterways. Southwest University of Political Science and Law.

-
- ¹ See *Transboundary Waters*, <https://www.unwater.org/water-facts/transboundary-waters/>.
- ² See *Ensure availability and sustainable management of water and sanitation for all*, <https://unstats.un.org/sdgs/report/2021/goal-06/>.
- ³ Attila Tanzi, *The Relationship between the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes and the 1997 United Nations Convention on the Law of the Non-Navigational Watercourses*, Geneva, 2000 (UN Doc. ECE/ENHS/NONE/00/02, GE 00-30528), https://unece.org/fileadmin/DAM/env/water/publications/documents/conventiontotal_Eng_final.pdf.
- ⁴ See *Yearbook of the International Law Commission 1994*, Vol. 2, Part. 2, A/CN.4/SER.A/1994/Add.1 (Part 2), p. 125.
- ⁵ See *International Convention for the Regulation of Whaling*, 1946, Art. 5.
- ⁶ See *Convention on Biological Diversity*, 1992, Arts. 6, 10-12.
- ⁷ See *United Nations Framework Convention on Climate Change*, 1992, Art. 3.
- ⁸ See *United Nations declaration of the human environment*, 1972, Principles. 1-10.
- ⁹ See *Rio Declaration on Environment and Development*, 1992, Principles. 1, 3-5.
- ¹⁰ See *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, I.C.J. Reports 2010, p. 48, para. 75; *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Provisional Measures, Order of 13 July 2006, I.C.J. Reports 2006, p. 133, para. 80.
- ¹¹ See *Convention on Cooperation for the Protection and Sustainable use of the Danube River (Danube River Protection Convention)*, <https://www.icpdr.org/flowpaper/app/services/view.php?doc=DRPC%20English%20ver.pdf&format=pdf&page={page}&subfolder=default/files/>
- ¹² See *Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin*, 1995, Art. 1, <https://www.mrcmekong.org/assets/Publications/policies/agreement-Apr95.pdf>.
- ¹³ See Revised Protocol on Shared Watercourses, 2000, Preamble, https://www.sadc.int/files/3413/6698/6218/Revised_Protocol_on_Shared_Watercourses_-_2000_-_English.pdf
- ¹⁴ See *Amazon Cooperation Treaty*, https://www.files.ethz.ch/isn/125370/1402_Amazon.pdf
- ¹⁵ See *Transforming our world: the 2030 Agenda for Sustainable Development*, <https://sdgs.un.org/2030agenda>.
- ¹⁶ See *Ensure availability and sustainable management of water and sanitation for all*, <https://unstats.un.org/sdgs/report/2021/goal-06/>.
- ¹⁷ *The Sustainable Development Goals Report 2021*, <https://www.un.org/en/desa/sustainable-development-goals-sdgs>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).