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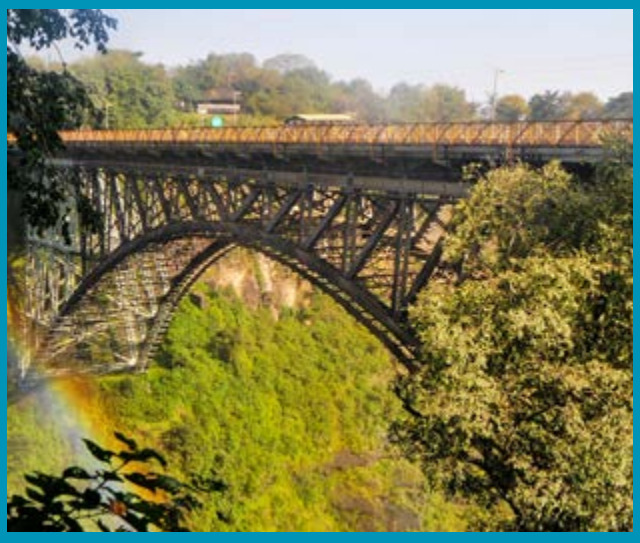
Practical Guide for the Development of Agreements or Other Arrangements for Transboundary Water Cooperation



UNITED NATIONS

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

Practical Guide for the Development of Agreements or Other Arrangements for Transboundary Water Cooperation

United Nations

Geneva, 2021

This publication is issued in English, Arabic, French, Russian and Spanish.

Photo credits: Depositphotos, Adobestock

United Nations publication issued by the United Nations Economic Commission for Europe.

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ECE/MP.WAT/68

UNITED NATIONS PUBLICATION
Sales No. E.21.II.E.8
ISBN 978-92-1-117271-3
eISBN: 978-92-1-005835-3

Cover photos:

Top left - Confluence of the rivers Baker and Neff, flowing out of Lake Bertrand shared by Chile and Argentina
Bottom left - Victoria Falls bridge at the border between Zambia and Zimbabwe
Right - Ili River valley near Almaty, Kazakhstan

FOREWORD

Waters that cross or mark sovereign borders unite more than they divide. There are many wonderful examples from around the world showing how countries share these rivers, lakes and aquifers, and proving the environmental, social, economic, political and cultural benefits that such cooperation generates. Transboundary water cooperation is also critical to help mitigate and adapt to the impacts of climate change and to advance sustainable development at the regional level.

Establishing cooperative arrangements for transboundary rivers, lakes and aquifers is an important means for countries to sustain their cooperation, thereby preventing conflicts and promoting regional integration. However, currently only 24 of the 153 countries sharing transboundary waters have all their waters covered by such cooperative arrangements.

A significant increase in the number of such arrangements is urgently needed and would constitute an important contribution to the global Decade of Action to deliver the SDGs by 2030, and to UN-Water's SDG 6 Global Acceleration Framework.

The development of transboundary water-cooperation arrangements is promoted by the successful implementation of both global Water Conventions - the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses, and the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention).

Within this context, this Practical Guide, which represents a collective effort of many experts under the Water Convention, is both timely and welcome. While political will is always the most important driver, this guide will undoubtedly aid those countries that have taken the step to develop new arrangements on their transboundary waters or revise existing ones. Through the Practical Guide, they will be able to build upon the experience of many countries around the world that have realized the benefits of cooperative arrangements. I therefore encourage policymakers and experts involved in transboundary water cooperation to make use of this practical guide, and in turn contribute to the wider efforts to accelerate progress on the SDGs.

Olga Algayerova

United Nations Under-Secretary-General
Executive Secretary of the United Nations
Economic Commission for Europe

Uruguay River at Conchillas, Colonia, Uruguay

ACKNOWLEDGEMENTS

This publication would not have been possible without the generous contributions of many Governments, individuals, and international organizations. The Water Convention secretariat expresses its gratitude to the members of bodies under the Convention, as well as to the expert reviewers, and all those who provided case studies, contributions and comments.

The secretariat thanks the members of the editorial group who drafted and edited the text of the Practical Guide:

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The secretariat also wishes to thank the drafting group that was responsible for preparing and reviewing the Practical Guide. The drafting group, in addition to the members of the editorial group, was composed of:

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The secretariat also thanks the following experts who reviewed the text of the publication:

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The secretariat gratefully acknowledges the valuable comments provided by the following members of the Implementation Committee: Attila Tanzi (Chair) and Dinara Ziganshina.

In the secretariat, Komlan Sangbana coordinated the preparation of the Practical Guide, supported by Sonja Koeppel. Valentina Paderi contributed to the development of the draft annotated outline. Chukwuebuka Edum, Indira Urazova and Melissa Mullane supported the preparation of the Guide. Chantal Demilecamps, Remy Kinna, Sarah Tiefenauer-Linardon and Francesca Bernardini provided inputs and comments. Minako Hirano and Mayola Lidome provided administrative support to the process.

Finally, this publication would not have been possible without funding from Germany for the development of the guide as well as its publication, and from the European Union for its translation into Arabic, French and Spanish.

While every effort was made to name all contributors, the secretariat regrets if any individual or organization has been overlooked in the lists above.

Tigris River in Baghdad, Iraq

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Saimaa lake, Kolovesi National Park, Finland

Rhine river in Anderrach, near Koblenz, Germany

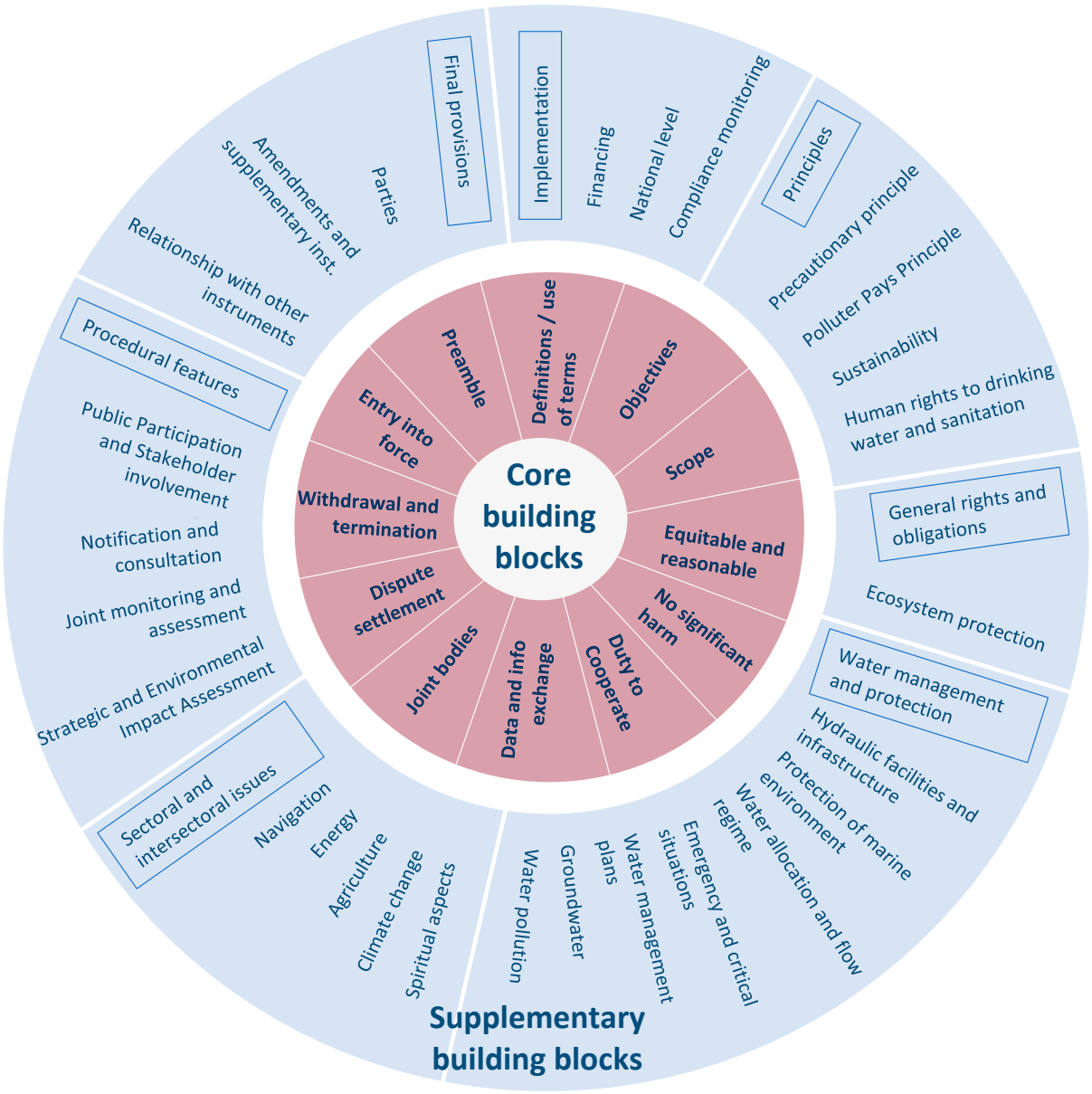
PRACTICAL GUIDE – AN OVERVIEW

Developing arrangements for transboundary water cooperation is crucial for ensuring the integrated and sustainable management of transboundary waters, which account for more than 60 per cent of global freshwater flow and preventing conflicts. Sustainable development goal (SDG) indicator 6.5.2 therefore measures progress towards transboundary water cooperation through the existence of operational arrangements in shared basins. The adoption of agreements or other arrangements is also a main obligation under the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention). While hundreds of agreements exist around the world, the SDG monitoring exercise has demonstrated that there is a need to significantly increase the number of transboundary rivers, lakes and aquifers covered by operational arrangements for water cooperation.

The Practical Guide seeks to support countries in the development of arrangements that are effective, adaptable and sustainable. It is not legally binding and does not purport to be prescriptive. The following diagram provides an overview of how countries should use the building blocks in the guide to structure an arrangement for transboundary water cooperation. **Core building blocks** are those that form the basic structure of the arrangement. These core building blocks are typically found in arrangements for transboundary water cooperation. **Supplementary building blocks** are those that countries may consider in light of their particular context. Supplementary building blocks may cover a specific area, such as energy, agriculture or navigation. Alternatively, supplementary building blocks may add greater specificity to the core building blocks. For example, while ecosystem protection is an important element of the core building blocks of equitable and reasonable utilization and no significant harm, these more general building blocks can be supplemented by detailed provisions on ecosystem protection, such as a provision on ecological flows.

Tigris River in Baghdad, Iraq

Figure 1: Overview of building blocks that might be included in an arrangement for transboundary water cooperation



When developing arrangements for transboundary water cooperation, States might assess the relevance of each of the building blocks highlighted in Figure 1 by considering the following questions:

Question 1 — **What form might the arrangement take?**

States may choose from a range of different forms of agreements or other arrangements. A convention or a treaty may undergo a more extensive review and formal process of adoption by each Party, i.e., ratification, compared to a memorandum of understanding or joint declaration, which may only require signature at a ministerial level. While a ratified convention or treaty, supported by the establishment of a joint body, tends to be the most common form of contemporary agreement on transboundary waters, ultimately it is up to the States concerned to agree upon which form would best suit their historical, legal and political context.

See p. 8 for further details.

Question 2 — **What core building blocks should be included in the arrangement?**

Core building blocks are those that form the basic structure of the arrangement (see Figure 1).

Preamble/Scope	**Preamble**	Most arrangements include a preamble, which outlines, in broad and general terms, the intention of the Parties and may include the context and vision or purpose that triggered the decision to develop an arrangement, as well as the political, economic, social, or environmental context and concerns. *See pp. 11-12 for further details.*
	Definitions/ use of terms	Most arrangements include a section on definitions. Definitions can establish shared meaning of particular terms and/or abbreviate commonly used terms within the arrangement. They help to address ambiguity and ensure a consistent interpretation of key terms amongst the Parties. *See pp. 13-14 for further details.*
	Objectives	Objectives, along similar lines to the preamble, can set out the goals of the arrangement and therefore guide its implementation and interpretation. *See pp. 15-16 for further details.*

Preamble/Scope	**Scope**	Setting out the scope of an arrangement provides certainty as to the elements covered by an arrangement, e.g., river basins, sub-basins, aquifers, surface water and groundwater, as well as the activities or uses covered by the arrangement. The scope of an arrangement may be provided for in a specific provision or in provisions concerning objectives and/or definitions. *See pp. 17-18 for further details.*
Substantive commitments	**Equitable and reasonable utilization**	Arrangements on transboundary waters often include a provision on equitable and reasonable utilization. Parties might decide whether to include a general provision that makes reference to the principle, or go further and include relevant factors to take into account when determining what is equitable and reasonable. When including the principle of equitable and reasonable utilization, Parties should be mindful that its implementation will be contingent on procedural rules, such as the duty to cooperate, to exchange data and information, and to notify and consult on planned measures. *See pp. 19-20 for further details.*
	Duty to take all appropriate measures to prevent significant harm	Agreements on transboundary waters often include the so-called "no-harm principle", ie., the duty to take all appropriate measures to prevent significant harm. Parties may wish to clearly set out the type of measures that should be adopted in order to prevent, control and reduce significant transboundary harm, such as those provided in Article 3 of the 1992 Water Convention. *See pp. 21-22 for further details.*
	General obligation to cooperate	The obligation to cooperate, which finds its basis in the Charter of the United Nations, should underpin all arrangements for transboundary waters between countries. Such an obligation is often included in arrangements on transboundary waters. *See pp. 25-26 for further details.*
Procedures and implementation	**Data and information exchange**	Most arrangements on transboundary waters include a provision related to data and information exchange, which is a fundamental basis upon which the Parties can develop their cooperation. Arrangements may go into further detail about the type of data and information to be exchanged and the methods and frequency of exchange, or may include more specific detail in an annex or subsequent protocol to the arrangement. *See pp. 69-70 for further details.*

Procedures and implementation

Establishment of joint bodies	Joint bodies provide an important means by which to implement the arrangement, and are therefore commonly found within arrangements for transboundary waters. Arrangements set out the status, structure, tasks and functions of a joint body. *See pp. 87-89 for further details.*
Dispute settlement	The majority of arrangements include a provision on dispute settlement, which is in line with the general requirement contained in Article 33 of the Charter of the United Nations for States to settle their disputes in a peaceful manner. States may agree on a range of different steps and means by which to settle their disputes. *See pp. 94-96 for further details.*
Entry into force	A provision for entry into force puts in place processes that trigger the coming into legal effect of an arrangement at domestic level, and is therefore an important element of an arrangement. *See pp. 105-106 for further details.*
Withdrawal and termination	While different approaches exist, most arrangements provide a procedure by which a Party may withdraw from an arrangement, as well as procedures by which the arrangement may be terminated. *See pp. 107-108 for further details.*

Question 3

Should the arrangement include general principles and other guiding concepts?

Including a set of general principles at the start of an arrangement informs how the more specific substantive and procedural requirements within the arrangement are implemented.

See pp. 28-35 for further details.

Precautionary principle	The explicit inclusion of the precautionary principle within an arrangement on transboundary waters helps to ensure that environmental obligations contained in the arrangement are interpreted by the Parties within the context of scientific uncertainty, such as future scenarios concerning the impacts of climate change or the impacts of transboundary pollutants. *See pp. 28-29 for further details.*

Sustainability	The inclusion of the concept of sustainability as a guiding principle within an arrangement for transboundary waters allows States to internalize and address long-term social, economic, and environmental costs that might affect the distribution of costs and benefits today and across generations. *See p. 30 for further details.*
Polluter/ user-pays principle (PPP)	While the polluter-pays principle has a primarily national focus, its inclusion within an arrangement assists States to harmonize any relevant national laws. *See pp. 31-32 for further details.*
Human rights to safe drinking water and sanitation	A few arrangements make reference to the rights to safe drinking water and sanitation in recognition of broader efforts though the United Nations General Assembly and the Human Rights Council to promote these rights at a national level. *See pp. 33-35 for further details.*

Question 4

Should the arrangement include provisions on general substantive rights and obligations?

As illustrated in Figure 1, the principle of equitable and reasonable utilization, and the duty to take all appropriate measures to prevent significant harm, are core building blocks found in most arrangements on transboundary waters. Many contemporary arrangements also include more detailed provisions related to ecosystem protection.

See pp. 19-26 for further details

General obligation to protect ecosystems	While covered by the principles of equitable and reasonable utilization and no significant harm, including a provision on ecosystem protection allows States to place specific emphasis on the need to protect ecosystems and to provide more detailed measures, such as those related to environmental flows. ***See pp. 23-24 for further details.***

Question 5

Should the arrangement include provisions on water management and protection issues?

Provisions on water management and protection issues cover a range of topics including infrastructure, pollution, water allocation and flow, emergency or critical situations, groundwater, marine protection, and management plans. Covering these issues within an arrangement supplements the core substantive obligations.

See pp. 37-55 for further details.

Water allocation and flow regulation	Where States have developed water allocation and flow-regulation scenarios, these may be included in an arrangement, such as within an annex; or the arrangement might commit the States to develop rules on water allocation and flow regulation. *See pp. 37-39 for further details..*
Hydraulic facilities and infrastructures	States in an advanced stage of cooperation may include provisions within an arrangement or its annexes concerning the joint ownership and/or management of hydraulic facilities and infrastructure. States may also decide to include a provision related to the safety of hydraulic facilities and infrastructure. *See pp. 40-41 for further details.*
Prevention, reduction and control of pollution	Consistent with the two Global Water Conventions, States often adopt provisions relating to the prevention, reduction and control of pollution with a view to ensuring for co-ordinated or joint action. *See pp. 42-43 for further details.*
Emergency or critical situations	Including provisions related to emergency or critical situations reduces disaster-related risks by committing States to develop contingency plans, early-warning systems, and procedures on mutual assistance in the event of both natural disasters, or emergencies that are the result of human conduct. *See pp. 44-47 for further details.*
Water/basin/ aquifer management plans	Plans are an important means by which to reassess the current and forecasted state of the basin, along with the need of the countries to inform the setting of priorities for the basin or aquifer, and to ensure that national priorities are coordinated at the transboundary level. A commitment to the development of a joint transboundary plan, or co-ordinated national plans, and to reviewing such plans periodically, will strengthen an arrangement's implementation. *See pp. 48-49 for further details.*

Groundwater	While groundwater specific arrangements remain limited, most contemporary arrangements for transboundary water cooperation recognise the interaction between both surface water and groundwater. States may also wish to include more specific provisions related to groundwater that recognise its distinct characteristics, such as in some cases being non-renewable, or being more sensitive than surface water to pollution. *See p. 50-52 for further details.*
Protection of marine environment	Including a provision related on the protection of the marine environment recognizes the interactions across the source-to-sea system, and the impact of land-based activities on the marine environment. *See p. 53-55 for further details.*

Question 6

Should the arrangement include provisions on sectoral and intersectoral issues?

Provisions on sectoral and intersectoral issues cover a range of topics including agriculture, energy, navigation, climate change and the spiritual aspects of water. Covering these issues within an arrangement supplements the core substantive obligations.

See pp. 57-67 for further details.

Agriculture	Where agriculture accounts for any existing or potential transboundary impacts, States may decide to include a dedicated provision related to agricultural development. However, it is more likely that the impact of agricultural practices is taken into acount across a range of provisions, including in the tasks of a joint body, or in commitments to prevent, control and reduce pollution. *See pp. 57-58 for further details.*
Energy	Including provisions relating to energy can ensure better predictability and an adequate legal basis for liability, water uses and compensation measures, as well as ensuring coordination at the level of, and between basin organizations and, where appropriate, regional power pools. However, if States decide not to include specific provisions related to energy, such practices would still be covered by more general requirements, including the principle of equitable and reasonable utilization, or the duty to take all appropriate measures to prevent significant harm. *See pp. 59-60 for further details.*

River navigation	States may decide to include provisions that regulate navigation and/or commit the Parties to protect transboundary waters from any negative environmental impacts associated with navigation. If the Parties decide not to include specific provisions related to navigation, such practices would still be covered by more general requirements, including the principle of equitable and reasonable utilization and the duty to take all appropriate measures to prevent significant harm. *See pp. 61-62 for further details.*
Climate change	States may include a specific commitment to develop a climate-change strategy for the basin, or ensure that one is embedded within a basin management plan, or commit themselves to specific water regime protocols in periods of water scarcity. If States decide not to include specific provisions related to climate change, such aspects may still be captured through other provisions related to, for example, extreme events, the tasks of a joint body, or the development of a basin management plan. *See pp. 63-64 for further details.*
Spiritual aspect of water	While not commonplace, including explicit reference to the spiritual aspects of water may help to incorporate indigenous people's views and beliefs systems into decision-making process at the basin level. Where the spiritual aspects of water are not included in an arrangement, any established joint body may, where appropriate, develop supplementary instruments that explicitly incorporate these aspects. Also, the spiritual aspects of water would still be covered by more general requirements, including the principle of equitable and reasonable utilization, or the duty to take all appropriate measures to prevent significant harm. *See pp. 65-67 for further details.*

Question 7

Should the arrangement include provisions on procedural norms?

As illustrated in Figure 1, the duty to exchange data and information is a core building block found in most arrangements on transboundary waters. States may consider including additional procedural norms to support the implementation of an arrangement's substantive commitments.

See pp. 71-80 for further details.

Notification and consultation	It is common for arrangements on transboundary waters to include a provision on notification and consultation which is a fundamental basis upon which the Parties can develop their cooperation. Some arrangements provide a general provision on notification and consultation, whereas other arrangements spell out specific steps to follow in the case of planned measures. *See pp. 71-72 for further details.*

Public participation and stakeholder involvement	Most contemporary arrangements recognize the importance of engaging stakeholders and the public in water management issues, and therefore include a provision related to access to information, participation in decision-making and access to justice. *See pp. 73-74 for further details.*
Strategic and environmetal impact assessment	Most contemporary arrangements include a provision related to environmental impact assessment, and in some instances also strategic environmental impact assessment. These provisions clarify requirements both in terms of the content and process by which environmental impact assessments are developed and implemented consistently across State jurisdictions. *See pp. 75-78 for further details.*
Joint monitoring and assessment	Basic requirements for joint monitoring and assessment might be set out in a provision of an arrangement, annex or subsequent protocol that covers, for example, harmonization of data gathering and processing. *See pp. 79-80 for further details.*

Question 8

Should the arrangement include provisions on implementation?

As illustrated in Figure 1, the establishment of joint bodies and dispute settlement are core building blocks found in most arrangements on transboundary waters. States may consider including additional provisions on implementation, including national implementation, financing, and compliance monitoring.

See pp. 83-93 for further details.

Implementation at the national level	National measures are critical for ensuring that the international commitments contained in an arrangement are implemented. States may therefore include a provision that commits the Parties to implement certain national measures, such as regulatory frameworks for waste water, or to establish institutional structures for coordinating implementation at the national level, such as national river basin committees. *See pp. 83-85 for further details.*

Compliance monitoring	A provision related to compliance monitoring provides a useful means by which States can monitor progress in the implementation of the arrangement in a transparent manner, and ensure the necessary technical or financial assistance to address any incidences of non-compliance. *See pp. 92-93 for further details.*
Financing	For the sake of transparency and sustainability, it is advisable to include a provision that sets out how the costs of implementing the arrangement are shared, and in particular how to provide for and sustain the running of any joint institutional structure. *See pp. 90-91 for further details.*

Question 9

Should the arrangement include final provisions?

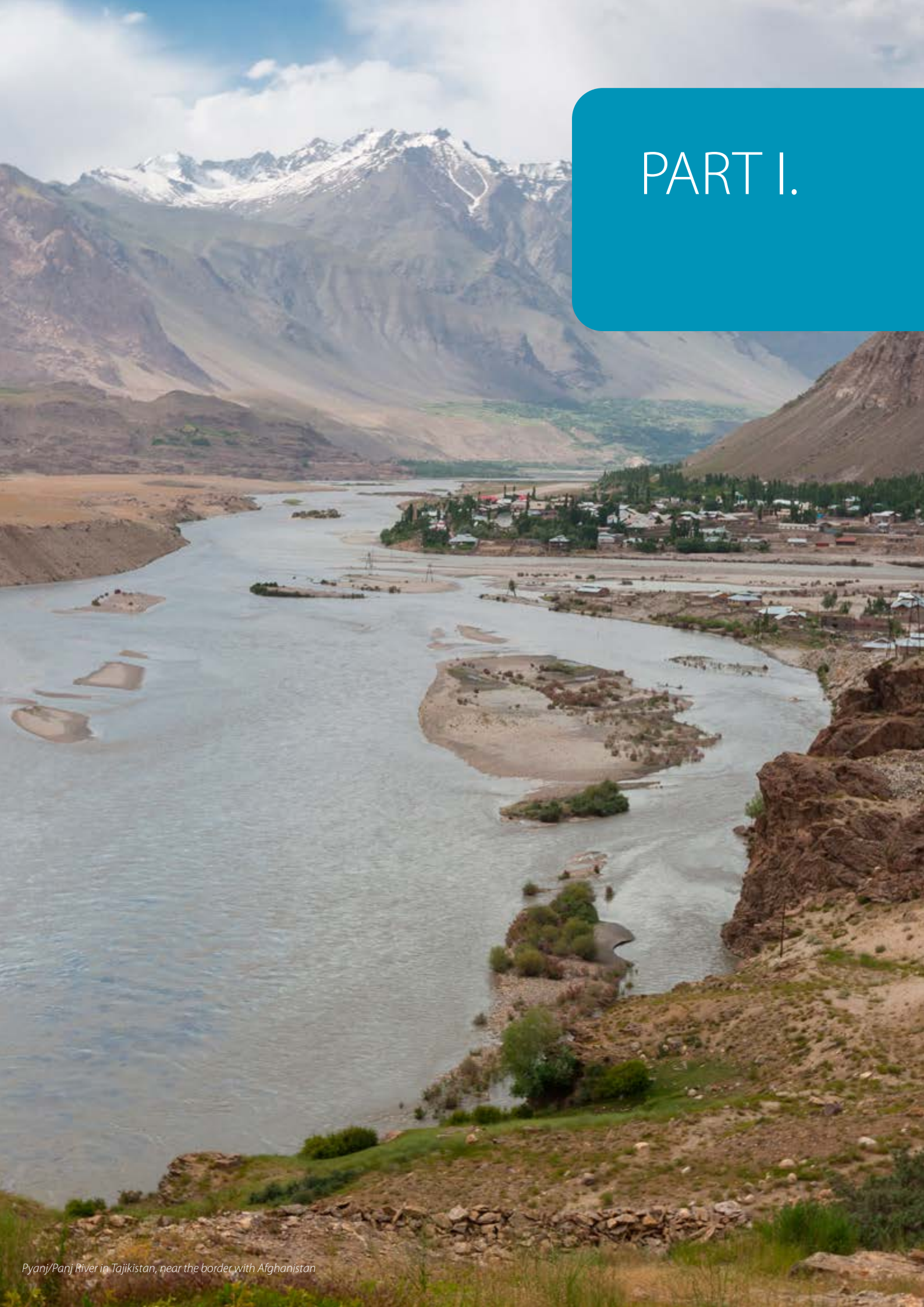
As illustrated in Figure 1, entry into force, and withdrawal and termination, are core building blocks found in most arrangements on transboundary waters. States may consider including additional final provisions, including on Parties, the relationship with other agreements, and amendments and supplementary instruments.

See pp. 99-108 for further details.

Parties	A provision might help clarify who can be Party to an arrangement, especially where it is envisaged that non-State entities, such as international organizations, might become a Party. *See pp. 99-100 for further details.*
Relationship with other agreements	Parties to the arrangement might want to explicitly state that any rights and obligations within the arrangement do not affect those emanating from existing arrangements. *See pp. 101-102 for further details.*
Amendments and supplementary instruments	Some arrangements provide a joint body with the function of developing supplementary instruments, such as protocols to the arrangement, which can be a useful way to embed adaptability within the arrangement. *See pp. 103-104 for further details.*

Eastern Scheldt storm barrier at the former estuary of Scheldt River, Zeeland, Netherlands

PART I.



Pyanj/Panj River in Tajikistan, near the border with Afghanistan

Introduction: About the Practical Guide

A. Background

The Convention on the Protection and Use of Transboundary Watercourses and International Lakes ("1992 Water Convention") emphasizes that cooperation in regard to the protection and use of transboundary waters shall be implemented primarily through the elaboration of agreements between riparian countries, to ensure its sustainability and predictability. The Convention has driven the development of such agreements by its Parties and also by countries which have not ratified it.

However, the reporting under the 1992 Water Convention and on SDG indicator 6.5.2, which measures the existence of operational arrangements in shared basins, show that developing agreements on transboundary waters remain a challenge.

At its eighth session in October 2018, the Meeting of the Parties to the 1992 Water Convention therefore decided to undertake activities supporting the development of agreements and the establishment of joint bodies, including the preparation of a practical guide on developing agreements and good practices.

The preparation of the Practical Guide for the Development of Agreements or Other Arrangements for Transboundary Water Cooperation (the "Practical Guide") started in 2020, with a preliminary study which provided a basis for the conceptual development of the guide. A draft annotated outline was subsequently developed, in cooperation with several partners, and presented at the Virtual Workshop on Designing Legal Frameworks for Transboundary Water Cooperation (Geneva, 28–29 July 2020). Participants were invited to provide their comments and observations on the draft annotated outline.

The 1992 Water Convention secretariat revised the outline based on the inputs received from the Virtual Workshop and presented a draft at the fifteenth meeting of the Working Group on Integrated Water Resources Management (Geneva, 30 September–2 October 2020). The Working Group called upon States and other partners of the Convention to actively contribute to the development of the Practical Guide and entrusted the 1992 Water Convention secretariat, in cooperation with the lead Party and a drafting group, to develop the text of the Practical Guide, for consideration by the Working Group at its subsequent meeting. The drafting group then developed the text of the Practical Guide by March 2021. The drafting group was composed of experts from Governments, academia, and non-governmental and intergovernmental organizations.

The draft Practical Guide was presented at the third joint meeting of the Working Group on Integrated Water Resources Management and the Working Group on Monitoring and Assessment, held on 26-28 April 2021. The comments received by States and other partners of the Convention after the meeting were addressed in the finalized Practical Guide adopted during the ninth session of the Meeting of the Parties to the 1992 Water Convention (29 September to 1 October 2021).

B. Objective and scope of the Practical Guide

The purpose of the Practical Guide is to support States in the design and drafting of agreements or other arrangements for transboundary waters,[1] including both surface and groundwaters. Where needed and appropriate, and where agreed by the Parties, the Practical Guide could also support a review and update of arrangements already in place.

The Practical Guide ultimately aims to support implementation of the Water Convention and acceleration of progress towards SDG 6 and its target 6.5.

The Practical Guide provides elements that States might consider for inclusion in arrangements for transboundary waters, along with explanations and examples to help determine when these elements may be appropriate. In addition, the Practical Guide provides guidance on elements that would strengthen the resilience and adaptability of arrangements over time to meet changing needs and conditions, including amendment procedures, the possible development of protocols and annexes, and related legal and technical procedures. While in its introductory part the Practical Guide includes brief comments on the process behind the development and revision of arrangements,[2] this aspect is not covered within the Practical Guide itself. The Practical Guide does not therefore purport to offer guidance on what makes for an effective negotiation process. The Practical Guide can, however, support such negotiation processes by offering States guidance on what issues should be discussed and could be included in their arrangements, as well as the implications of choosing different approaches.

C. Target audience

State representatives, legal and technical experts, decision-makers involved in negotiation of agreements or other arrangements for transboundary waters, the staff of river basin organizations, regional organizations, and other stakeholders working on transboundary cooperation and water diplomacy are the target audience of the Practical Guide.

D. Rationale for the Practical Guide's design

The Practical Guide is structured in a way that captures a wide diversity of practice related to the design and implementation of agreements and other arrangements for transboundary waters and recognizes that there is no "one-size-fits all" approach. Therefore, the Practical Guide does not aim to be prescriptive. Rather, the Guide supports States sharing transboundary waters in their choice of a range of provisions, allowing them to tailor an arrangement to their specific circumstances. In addition, the Guide supports States in developing arrangements that are effective, adaptable, and sustainable.

E. Status of the Practical Guide

An expert drafting group has developed the Practical Guide within the framework of the 1992 Water Convention. It is not legally binding and does not supersede the provisions of the Convention.

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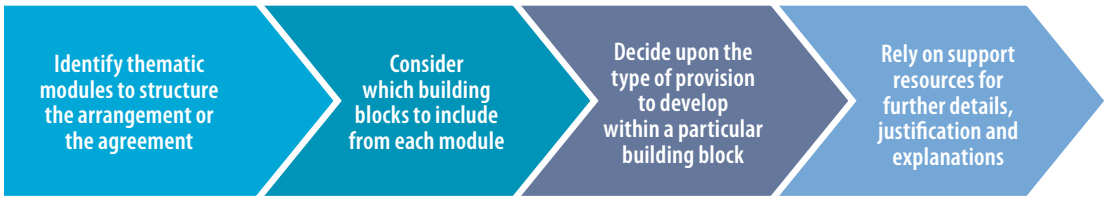
1 For a definition of "agreement or other arrangement for transboundary waters", see UNECE, *Guide to reporting under the Water Convention and as a contribution to SDG indicator 6.5.2*, https://unece.org/sites/default/files/2021-02/ece_mp.wat_60_eng_web.pdf, pp. 13-15.

2 See Part II: Setting the context, pp. 5-9.

F. Structure and how to use the Practical Guide

The Practical Guide is based on:

- Six main **thematic modules**, which help structure an agreement or other arrangement for transboundary waters;
- **Building blocks**, which correspond to possible provisions or issues within an arrangement;
- **Key aspects** of each building block, which suggest its primary content;
- **Introductory text** to each building block, setting out its context and rationale;
- **Key considerations**, which explain different approaches that might be taken within the arrangements, and the implications thereof;
- **Examples from treaty practice** that illustrate how to frame a particular provision; and
- **Support resources** to assist States in developing the content of a particular provision, e.g., specific guidance documents developed under the 1992 Water Convention.[3]



The Practical Guide is not a set of requirements, but a menu of options for consideration when discussing or developing agreements or other arrangements for transboundary waters. State representatives or other stakeholders using the tool should assess and agree to which parts of the guide are relevant within their context. That said, each of the building blocks represents an important issue for consideration in the development of an agreement or other arrangement as they help ensure its coherence and effective implementation. For example, many of the procedural features contained in module four are fundamental to supporting the effective implementation of the substantive norms presented in module three.

The issues or provisions proposed in the building blocks of the Practical Guide are reflective of international practice. They are drawn from provisions typically found within agreements or other arrangements for transboundary waters, as well as in provisions of the 1992 Water Convention and the 1997 Convention on the Law of Non-navigational Uses of International Watercourses ("1997 Watercourses Convention"). Certain parts of the Practical Guide also support State efforts to achieve the transboundary element of SDG target 6.5 by ensuring that arrangements are consistent with the "operational" criteria set out in SDG indicator 6.5.2.[4]

The final choice of building blocks will depend on specific State needs, hydrology, and basin/aquifer conditions. In this respect, to reach informed decisions it is helpful for States discussing arrangements to have a common understanding of current conditions, challenges, opportunities and benefits from cooperative management of the basin or aquifer.[5]

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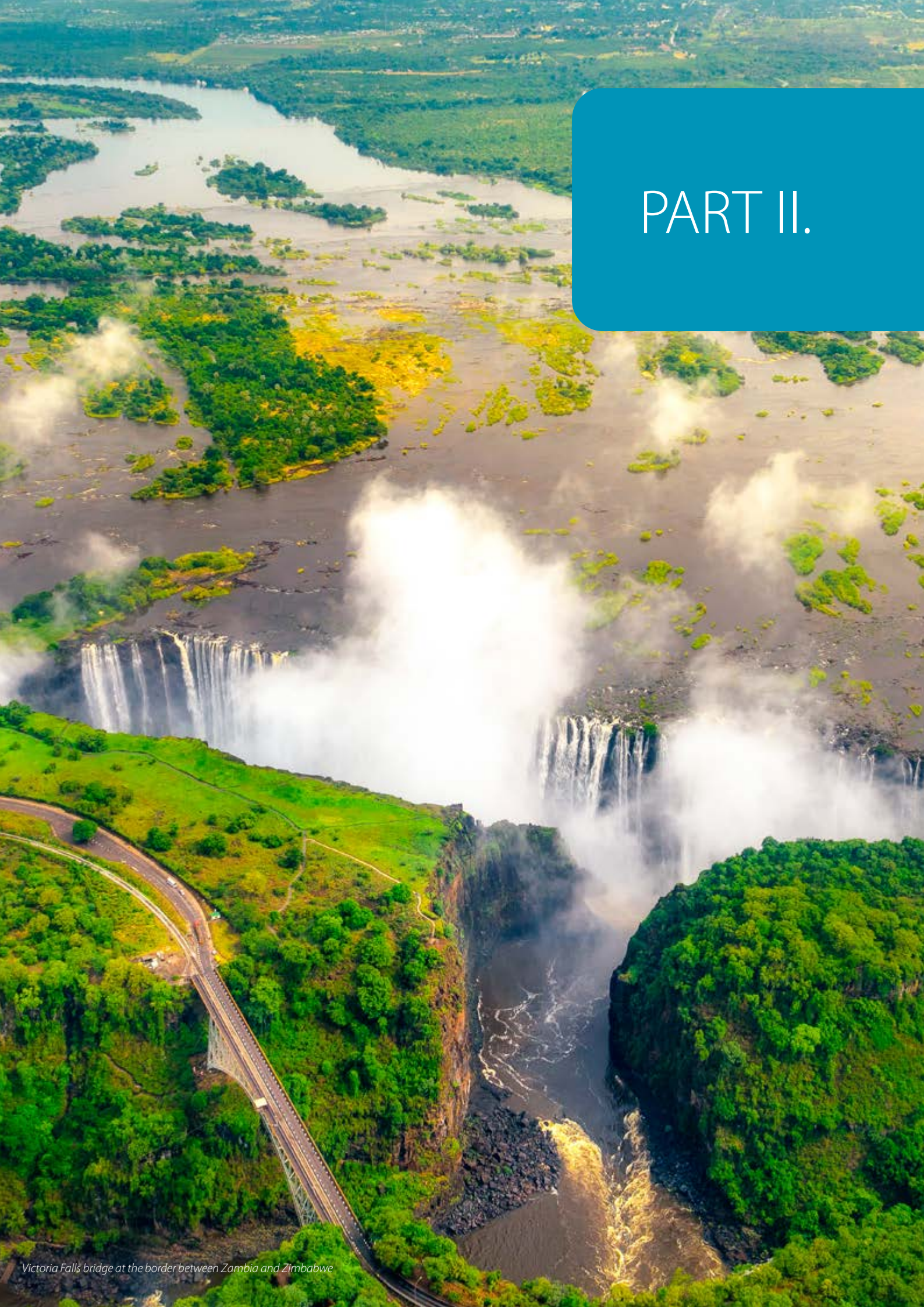
3 See for example, UNECE, *Guide to Implementing the Water Convention*, 2013, https://unece.org/DAM/env/water/publications/WAT_Guide_to_implementing_Convention/ECE_MP.WAT_39_Guide_to_implementing_water_convention_small_size_ENG.pdf .

4 For an arrangement to be "operational" in accordance with SDG indicator 6.5.2, there should be an established joint body or mechanism, at least annual meetings and exchanges of data and information between States, and joint or coordinated water management plan(s), or similar instruments must be in place. See UNECE and UNESCO, *Step-by-step monitoring methodology for SDG indicator 6.5.2 (revised version, 2020),* https://www.unwater.org/publications/step-step-methodology-monitoring-transboundary-cooperation-6-5-2.

5 See Part II (B), Key message 1: The process of developing an agreement or other arrangement is itself an important outcome, p. 7.

PART II.



Victoria Falls bridge at the border between Zambia and Zimbabwe

Setting the context

A. Benefits of developing agreements or arrangements for transboundary water cooperation

The obligation to enter into agreements and establish joint bodies is a key obligation for riparian Parties to the 1992 Water Convention. The importance of agreements for transboundary water cooperation has indeed been recognized over the years. For instance, in 2016, the High-Level Panel on Water, convened by the United Nations and the World Bank Group, noted that "agreements and institutional arrangements, such as river basin organizations, can offer an important means by which to manage transboundary waters in an equitable and sustainable way, and in turn, support prosperity, and maintain peace and security".[6] When negotiated and implemented in an equitable and legitimate manner,[7] these arrangements have the potential to help improve water management and cooperation throughout an entire basin, which can result in a large number of direct and indirect economic, social and environmental benefits for all stakeholders.

Agreements or other arrangements on transboundary waters are also a strong reflection of State willingness to work cooperatively to address shared challenges consistent with international norms and standards. The adoption of arrangements can increase access to financial and technical support from international donors for national and regional development projects, such as joint investments to improve power and agricultural production, water-based transport development, regional trade and commerce, expansion of the tourism sector, regional conservation and ecosystem protection.

An extensive survey of arrangements for transboundary waters conducted by Oregon State University concluded that States working cooperatively on transboundary waters through arrangements generally have the potential to reduce political tensions, and that the "establishment of institutional capacity in the form of agreements, treaties or informal working relationships, can help reduce the likelihood of conflict".[8] Furthermore, "these institutional capacities have proven to be mostly resilient over time, even as conflict was being waged over other issues".[9]

As noted in Key Message 1 below, negotiations, confidence-building measures, exchange of information and joint activities that lead to the conclusion of an arrangement can also build capacity, increase trust, and foster shared understandings between States. However, arrangements must also be borne out of a legitimate process whereby the needs and interests of all States concerned are taken into account

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6 High Level Panel on Water, *Making every drop count: An agenda for water cooperation,* 2018, https://sustainabledevelopment.un.org/content/documents/17825HLPW_Outcome.pdf; see also Global High-Level Panel on Water and Peace, *A matter of survival,* 2017, https://www.genevawaterhub.org/sites/default/files/atoms/files/a_matter_of_survival_www.pdf.

7 See Zeitoun, M., and Warner, J., "Hydro-hegemony: a framework for analysis of trans-boundary water conflicts", *Water Policy*, vol. 8 (5), 2006.

8 Wolf, A. T., Stahl, K., and Macomber, M. F., *Conflict and cooperation within international river basins: The importance of institutional capacity*, 2003; Yoffe S., *et al*, "Geography of international water conflict and cooperation: Data sets and applications," *Water Resources Research*, vol. 40, 2004.

9 Wolf, A. T., "The Transboundary Freshwater Dispute Database Project", *Water International*, vol. 24(2), 1999.

and effectively balanced. Otherwise, the costs and benefits of managing transboundary waters may not be optimized or distributed in an equitable and reasonable manner among all the stakeholders.[10]

More generally, arrangements provide a platform upon which the benefits of transboundary water cooperation can be realized and sustained. According to the dedicated Policy Guidance Note on the topic developed under the 1992 Water Convention,[11] such benefits might include:

- **Economic benefits** - by providing the specific requirements related to the quality, quantity and timing of water resources for economic activities (agriculture, industry, energy, nature-based tourism, water-based transport) and reducing the impact of water-related hazards
- **Social and environmental benefits** - by improving ecosystems health and providing ecological benefits, as well as social benefits (health impacts from improved water quality, employment, and poverty reduction derived from the economic benefits and cultural and recreational benefits)
- **Regional economic cooperation benefits** - creating an enabling environment for broader cooperation and investments beyond the river
- **Peace and security benefits** - including the strengthening of regional integration and mutual dependencies, the reduction of political tensions, and the development of dispute resolution tools and approaches; and,
- **Governance benefits** – including the establishment of clear rules and procedures for joint management, protections for marginalized stakeholders and the environment, and improving science-based and cooperative decision-making.

Supporting resources (*non-exhaustive*)

- UNECE, *Policy Guidance Note on the Benefits of Transboundary Water Cooperation*, 2015, https://unece.org/fileadmin/DAM/env/water/publications/WAT_47_Benefits/ECE_MP.WAT_47_PolicyGuidanceNote_BenefitsCooperation_1522750_E_pdf_web.pdf.
- Global High-Level Panel on Water and Peace, A Matter of Survival, 2017, https://www.genevawaterhub.org/resource/matter-survival.
- "Transboundary Water Governance", in High Level Panel on Water, Making every drop count: An agenda for water cooperation, 2018, https://sustainabledevelopment.un.org/content/documents/hlpwater/04-TransbounWaterGovernance.pdf.
- UNECE, Frequently Asked Questions on the 1992 Water Convention, 2020, https://unece.org/environment-policy/publications/frequently-asked-questions-1992-water-convention .

[10] See Zeitoun and Warner, no. 7.

[11] UNECE, *Policy Guidance Note on the Benefits of Transboundary Water Cooperation*: Identification, Assessment and Communication, 2015, https://unece.org/fileadmin/DAM/env/water/publications/WAT_47_Benefits/ECE_MP.WAT_47_PolicyGuidanceNote_BenefitsCooperation_1522750_E_pdf_web.pdf.

B. Key Message

Key Message 1: The process of developing an agreement or other arrangement is itself an important outcome

One of the greatest benefits from the development of any arrangement on transboundary waters is the process itself.

A legitimate process leading to the adoption of an arrangement can play a critical role in establishing the foundation for its implementation. Benefits of the process may include:

- Developing a common set of technical, legal, and process-management skills – e.g., running productive meetings, consensus building, negotiation, and successful dispute resolution
- Identifying inequalities and inequities and generating respect and appreciation for differing views and concerns, including providing the time and space for reconciliation of past grievances, and giving voice to those not previously or not directly represented
- Establishing trust and rapport among the Parties, ways of working together, and a common understanding of the modes of communications that reflect social and cultural differences
- Creating successes – for example through joint projects, programs, and arrangements - that develop shared and equal capacities, empower the Parties and stakeholders, establish ownership, strengthen political will, and concretely demonstrate the benefits of cooperation; and,
- Appreciating if, when, how and what kind of third-party support, e.g., capacity-building, technical, diplomatic or legal assistance, may be needed or helpful.

Depending on the existing relationship among the Parties, this process may take years or even decades. In some cases, the development of an arrangement may be among the first efforts at cooperation by the Parties. In all cases, rushing or ignoring the process outcomes highlighted above risks carrying existing conflicts forward and undermining the future effectiveness of the arrangement. When appropriately carried out, this process can set the stage for long-term sustainable success that is beneficial to all Parties concerned.

Often the steps necessary to develop an arrangement – fact-finding, scenario development and analysis, discussions, negotiations – provide opportunities to advance these outcomes. Joint data collecting, modelling, and analysis is an opportunity to share different perspectives, address knowledge gaps, and build a common understanding of existing and future conditions. Shared visioning exercises are an opportunity to appreciate stakeholder perspectives, identify shared interests, and establish a common language for describing broad goals and objectives. Study tours, joint trainings, and social activities build rapport and are opportunities to highlight concerns that are unique to specific social and cultural settings – they can humanize the Parties during what might be a highly adversarial process and create the space for promoting confidence-building and mutual understanding. The negotiation process itself can build listening and communication skills, promote respect, and provide opportunities for team building.

Building these elements into the process of developing any arrangement on transboundary waters is critical to ensuring its long-term success. Agreeing to work together is one thing: actually working together is another. But this is the challenge of managing shared waters. Using the process of developing an arrangement to address concerns, create ownership, and build the core skills needed to work together will create a strong foundation for implementation.

Key Message 2: Arrangements can take many shapes and forms

States are free to agree the form of agreement or other arrangement that they consider is most appropriate for governing their transboundary waters. Options include a framework convention, a bilateral or multilateral treaty, a protocol, a joint declaration, a memorandum of understanding, an exchange of letters, or agreed minutes of an intergovernmental meeting.[12] A convention or a treaty may undergo a more extensive review and formal process of adoption by each Party, i.e., ratification. By comparison, a memorandum of understanding or joint declaration may simply require signature at a ministerial level. While a ratified convention or treaty, supported by the establishment of a joint body, tends to be the most common form of contemporary agreement on transboundary waters, ultimately it is up to the States concerned to agree upon which form would best suit their particular historical, legal and political context. Arrangements may also evolve over time.

A common approach has been for States to enter into a broad bilateral treaty that covers all the waters that are shared between them.[13] Another common approach is to adopt an arrangement that covers a specific river, lake or aquifer system.[14] Where a broader basin-wide arrangement exists, subsequent arrangements might be adopted at both the bilateral and sub-basin levels.

In many cases, arrangements for transboundary waters are expressly kept broad to give the Parties the necessary flexibility to interpret and implement the arrangement in the optimal way, given changing circumstances. This allows for the implementation of the arrangement to evolve and adapt to the changing needs and capacities of the Parties, to changing hydrological conditions, and to changes in the value of water across multiple uses at different points in time. This same flexibility or lack of specificity, however, can lead to differences among the Parties on how to implement the arrangement, particularly in cases where major staff or political changes occur among the Parties concerned. Unresolved grievances, a general lack of trust, unrepresented Parties, or a lack of means to monitor compliance – as well as social, cultural, and language barriers that may impact communications or institutional procedures – can make joint decision-making difficult. In some cases, these difficulties could prevent the Parties from adopting new or innovative approaches that could advance the implementation of the arrangement or exacerbate tensions – potentially rendering the arrangement obsolete. Ultimately, the implementation of arrangements is a living process that must be nurtured to grow, strengthen and adapt to the specific circumstances it addresses.

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12 For examples of different types of arrangements, see UNECE and UNESCO, *Progress on Transboundary Water Cooperation – Global baseline for SDG indicator 6.5.2*, 2018, , https://www.unwater.org/publications/progress-on-transboundary-water-cooperation-652, p. 44.

13 See, for example, the Agreement between Poland and the Czech Republic on Cooperation on Transboundary Rivers in the Field of Water Management, 2017.

14 See, for example, the Agreement on the Establishment of the Zambezi Watercourse Commission ("Zambezi Agreement, 2004"); or in Latin America, the Treaty on the Rio de la Plata, 1969 and the Treaty of Yacyretá, 1973.

Key Message 3: Considering existing national and international law and practices

Prior to the negotiation and drafting of an arrangement on transboundary waters, it is necessary to assess what obligations a State might already have entered into. States also look to international practice in order to guide the development of their specific arrangements on transboundary waters. For instance, irrespective of whether the States in question are party to the 1992 Water Convention or the 1997 Watercourses Convention, they might look to both instruments to assess what provisions might be included in their arrangements on transboundary waters. Additionally, commitments made under multilateral environmental agreements (MEAs) – such as the Convention on Biological Diversity ("Biodiversity Convention"), the United Nations Framework Convention on Climate Change ("Climate Change Convention"), the Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat ("the Ramsar Convention") and the United Nations Convention to Combat Desertification – may influence the content of an arrangement for transboundary waters. Similarly, States may have commitments under human rights instruments that overlap with potential commitments under an arrangement on transboundary waters.[15]

When developing an arrangement for transboundary waters, States should also take all necessary implementing legislative measures. It may also be necessary to repeal or amend domestic legislation where it may be in conflict – directly or indirectly – with the provisions of the arrangement. This legislation may be in fields outside the water sector, e.g., biodiversity, energy, agriculture or climate change.

The processes of identifying existing national and international law that States must account for when developing an arrangement on transboundary waters can initially be done by carrying out a desk study survey of documents to trace the linkages between a State's obligations under MEAs, human rights instruments and other international law, as well as under national law. This will permit States to fully consider the depth and breadth of existing obligations and address any potentials difficulties prior to adopting a new arrangement.[16]

Supporting resources

- Boisson de Chazournes, L., Leb, C., Tignino, M., "The UNECE Water Convention and Multilateral Environmental Agreements", in Tanzi, A., *et. al.,* (eds.), *The UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes - Its Contribution to International Water Cooperation* (Brill/Nijhoff, 2015), pp. 60-72.
- Mason, S.J.A. and Blank, D., *Mediating Water Use Conflicts in Peace Processes*, 2013, https://www.researchgate.net/publication/278024538_Mediating_Water_Conflict_in_Peace_Processes.
- UNECE and UNESCO, *Progress on Transboundary Water Cooperation – Global Baseline for SDG indicator 6.5.2,* 2018, https://www.unwater.org/publications/progress-on-transboundary-water-cooperation-652.
- UN-Water, *Water cooperation in action: Approaches, tools, and processes*, 2013, https://www.un.org/waterforlifedecade/water_cooperation_2013/pdf/water_cooperation_in_action_approaches_tools_processes.pdf.
- UN-Water, *The United Nations global water conventions: Fostering sustainable development and peace*, 2020, https://www.unwater.org/publications/the-united-nations-global-water-conventions-fostering-sustainable-development-and-peace/.

[15] See key aspect: Human rights to safe drinking water and sanitation, pp. 33-35.
[16] See also key aspect: Accounting for existing and future arrangements, pp. 101-102.

PART III.

Prut River shared by Moldova, Romania and Ukraine

Tool

Module 1 - Preamble

The preamble of an arrangement includes in broad and general terms the context and vision or purpose that triggered the decision to develop the arrangement, as well as the political, economic, social, or environmental context and concerns that the Parties share. The vision and purpose that is set out in the preamble may incorporate shared principles, approaches and values.

What to consider when drafting the preamble

- **A preamble assists the Parties to interpret an arrangement.**

By laying out the overall vision that the implementation of an arrangement seeks to accomplish, the preamble of an arrangement, as recognized in article 31(2) of the Vienna Convention on the Law of Treaties, 1969 ("Vienna Convention, 1969"), provides the context for interpreting the operative sections of an arrangement. The Parties to an arrangement may therefore benefit from clearly spelling out in the preamble the overall goals and objectives to be achieved through the implementation of the arrangement, and the relationship with other legal instruments and institutions that operate at global, regional or sub-regional levels, as this will enable a systemic and dynamic interpretation of the arrangement.

- **A preamble can provide general guidance on emerging issues.**

Generally, the preamble refers to current water challenges and priorities, and their possible evolution in the future. As environmental awareness increases, new challenges may arise, e.g., future impacts of climate change. These emerging issues may be generally referred to in the preamble of an arrangement so as to recognize the arrangement's capacity to evolve in light of changing circumstances and emerging challenges.

How could provisions be framed? Examples from treaty practice *(non-exhaustive)*

Box 1: Niger Basin Water Charter, 2008

Niger Basin Water Charter, 2008

Preamble

State Parties to the present Niger Basin Water Charter (…)

Considering the fundamental right of each individual for access to water;

Considering that water is an ecological, social and economic asset whose preservation is of general interest (…);

Bearing in mind the progress made in the development and consolidation of international water law initiated by the Helsinki Rules of 1966 relating to the use of international river waters;

Based in particular on the conclusions of the United Nations International Conference on the Environment and Development (Rio de Janeiro, 1992), through the Rio Declaration on the Environment and Development and Agenda 21 (Chapter 18) (…)

Referring to the 17th March 1992 Helsinki Convention on the protection and use of transboundary watercourses and international lakes and to the Convention on the law of non-navigational uses of international watercourses, adopted in New York on 21 May 1997;

Recalling the bilateral and multilateral agreements governing the use of certain parts of the Niger Basin (…)

Other examples: Guarani Aquifer Agreement, 2010; Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, 1995 ("Mekong Agreement, 1995"), preamble.

Supporting resources *(non-exhaustive)*

- Mbengue, M. M., "The Notion of Preamble" in Wolfrum, R. (ed.), *The Max Planck Encyclopedia of Public International Law* (online edition) (Oxford University Press, 2008).
- Wolfrum, R., "Preamble" in Simma, B. (ed.), *The Charter of the United Nations: A commentary* (Oxford University Press, 1994), pp. 45–48

Ural/Zhayik River in West Kazakhstan Region, Kazakhstan

Module 2 – General provisions

Building block: Definitions or use of terms

Key aspect: identify and define key terms and concepts

Most agreements or other arrangements on transboundary waters include a section that defines specific terms used throughout the arrangement. Definitions establish shared meaning on terms or abbreviate commonly used terms within the arrangement. The definition of terms in the context of an arrangement must reflect the specific meaning that States seek to place on the words used in, and within the context of, the arrangement. Examples of terms defined in arrangements include, the "basin", "watercourse", "Parties", "water regime", "Commission", "sustainable use", "transboundary impact", "ecosystem", and "pollution".

What to consider when drafting a provision related to definitions or use of terms

- **An arrangement should define a term where it might be misinterpreted or contentious, and where its use within the arrangement is different from how it may be defined in other international or national instruments.**

Certain terms may be interpreted differently amongst the Parties negotiating an arrangement. Reaching a common understanding on the definition and use of these terms or concepts can avoid disputes when implementing the arrangement. However, certain terms may also be left undefined to allow flexibility in the negotiation and subsequent implementation of an arrangement. When including definitions within an arrangement, it is important to consider whether those terms are defined in other instruments to which the Parties are subject. For example, key terms such as "transboundary waters", "transboundary impact", "hazardous substances" and "best available technology" are defined in the 1992 Water Convention (Art.1). Similarly, the 1997 Watercourses Convention provides several definitions throughout its text, including for "watercourse", "international watercourse", "watercourse State", and "regional economic integration organization".

- **There is wide diversity in practice.**

Different approaches to the inclusion of definitions and use of terms can be seen in treaty practice. Some arrangements only include a few basic terms, whereas others may contain an extensive list of defined terms. Ultimately, it will be up to the Parties to decide what terms are important for them to define in order to support the implementation of the arrangement.

How could provisions be framed? Examples from treaty practice *(non-exhaustive)*

Box 2: Statute of the River Uruguay, 1975

Statute of the River Uruguay, 1975

Article 2. For the purposes of this Statute:

(a) 'Parties' means the Eastern Republic of Uruguay and the Argentine Republic;

(b) 'Treaty' means the Treaty between the Eastern Republic of Uruguay and the Argentine Republic concerning the Boundary Constituted by the River Uruguay signed at Montevideo on 7 April 1961;

(c) 'River' means the section of the River Uruguay referred to in article 1 of the Treaty;

(d) 'Statute' means this legal instrument;

(e) 'Commission' means the Administrative Commission of the River Uruguay established under the Statute;

(f) 'Protocol' means the Protocol concerning the Delimitation and Marking of the Argentine-Uruguayan Boundary Line in the River Uruguay, signed at Buenos Aires on 16 October 1968.

Other examples: Convention on the Sustainable Management of Lake Tanganyika, 2003 ("Lake Tanganyika Convention, 2003"), Art. 1; and the Protocol Amending the Agreement Between Canada and the United States of America on Great Lakes Water Quality, 1978, as Amended on October 16, 1983 and on November 18, 1987 ("Great Lakes Agreement, 2012"), Art. 1.

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, https://www.researchgate.net/publication/230734482_UN_Watercourses_Convention_User's_Guide, pp. 75-85.
- UNECE, *Guide to implementing the Water Convention*, 2013, https://unece.org/environment-policy/publications/guide-implementing-water-convention, pp. 105-106.
- Rieu-Clarke, A., "Definitions and use of terms (Article 2)", in Boisson de Chazournes, L., *et. al.*, (eds.), *The UN Convention on the Law of the Non-Navigational Uses of International Watercourses – A Commentary* (Oxford University Press, 2018), p. 45.

Module 2 – General Provisions

Building block: Objectives

Key aspect: general and specific objectives of the arrangement

Objectives reflect the aspirations and goals of States negotiating an arrangement on transboundary waters. This building block expressly incorporates, defines, and delineates the purpose of an arrangement. Over the last decades, there has been a growing trend for arrangements on transboundary waters to adopt a holistic approach that accounts for social, economic and environmental interests.[17] In this context, general objectives can promote aspirations, such as the protection of the environment, integrated water resources management, the sustainable use of transboundary waters, the strengthening of regional peace and integration, as well as the improvement of livelihoods and poverty alleviation.[18] These general objectives can guide the development of more specific objectives that provide the basis for concrete and tangible strategies and actions.

Box 3: Agreement for Establishment of the Binational Commission for the Integrated Water Resources Management of the Transboundary Basins shared between Ecuador and Peru, 2017

Agreement for Establishment of the Binational Commission for the Integrated Water Resources Management of the Transboundary Basins shared between Ecuador and Peru, 2017

An example of a recent agreement that embraces an integrated approach to transboundary water cooperation is the 2017 Agreement for Establishment of the Binational Commission for the Integrated Water Resources Management (IWRM) of the Transboundary Basins shared between Ecuador and Peru. The Agreement expressly defines and incorporates an IWRM approach to regulate the nine basins shared[19] between Ecuador and Peru.

Itaya River in Iquitos, Peru

[17] McCaffrey, S.C, "The progressive development of international water law", in Loures, F. and Rieu-Clarke, A. (eds.), *The UN Watercourses Convention in Force* (Routledge, 2013), pp. 10-11.

[18] See for example, the Lake Tanganyika Convention, 2003; the 1998 Convention on the Cooperation for the Protection and Sustainable Use of the Waters of the Luso-Spanish River Basin ("Albufeira Convention, 1998"); and the Convention on the Protection of the Rhine, 1999 ("Rhine Convention, 1999"). For regional peace and integration and the improvement of livelihoods, see the Revised Protocol on Shared Watercourses in the Southern Africa Development Community (SADC), 2000 ("Revised SADC Protocol, 2000").

[19] These basins include those flowing to the Pacific Ocean, ie., the Zarumilla, Puyango-Tumbes and Catamayo-Chira, and those flowing to the Amazon River, ie., the Mayo-Chinchipe, Santiago, Morona, Pastaza, Conambo-Tigre and Napo basins.

What to consider when drafting a provision related to objectives

- **Use objectives to establish a basis for further cooperation.**

The ability of the Parties to negotiate and adopt general and specific objectives will depend on their existing level of cooperation. Arrangements incorporating only broad and general objectives can be beneficial as regards rivers, lakes or aquifers where there are no previous joint management mechanisms. In these cases, general objectives serve as an initial framing for future discussions.

- **Use specific objectives to guide effective implementation and interpretation.**

Specific objectives will provide clarity on tangible steps and actions needed to achieve cooperation goals, which can subsequently be monitored. These specific objectives can be reflected in the development of transboundary water management plans, can guide the harmonization of national legislation, or assist in the allocation of the financial resources required to implement the arrangement.

- **A balance must be struck between specificity and the need for an arrangement to adapt to changing circumstances and priorities.**

An arrangement's effectiveness can be assessed by the extent to which its objectives have been accomplished. The incorporation of clear targets and milestones that expressly define timelines and the progressive steps required to fulfill the commitments contained in an arrangement may allow States and any joint bodies to monitor and report their progress and adjust specific approaches to transboundary water management, if required. However, to allow the arrangement to adapt over time, States may prefer to set out specific time-bound objectives within supplementary instruments, such as a programme of work adopted by a joint body, rather than in an arrangement itself.

How could provisions be framed? Examples from treaty practice *(non-exhaustive)*

Box 4: Treaty for Amazonian Cooperation, 1987

Treaty for Amazonian Cooperation, 1987

Article 1

The Contracting Parties agree to undertake joint actions and efforts to promote the harmonious development of their respective Amazonian territories in such a way that these joint actions produce equitable and mutually beneficial results and achieve also the preservation of the environment, and the conservation and rational utilization of the natural resources of those territories.

Other examples: Treaty between the Government of the Republic of Moldova and the Cabinet of Ministers of Ukraine on Cooperation in the Field of Protection and Sustainable Development of the Dniester River Basin, 2012 ("Dniester Treaty, 2012"), Art. 1; Lake Tanganyika Convention, 2003, Art. 2; and the Convention on the Protection of the Rhine, 1999 ("Rhine Convention, 1999"), Art. 3.

Supporting resources (*non-exhaustive*)

- UNECE and UNESCO, *Progress on Transboundary Water Cooperation – Global Baseline for SDG indicator 6.5.2*, 2018.
- UNECE, *The Water Convention: Responding to global water challenges*, 2018, https://unece.org/fileadmin/DAM/env/water/publications/brochure/Brochures_Leaflets/A4_trifold_en_web_2018.pdf .
- UNECE, *Identifying, assessing and communicating the benefits of transboundary water cooperation*, 2018, https://unece.org/environment-policy/publications/identifying-assessing-and-communicating-benefits-transboundary.

Module 2 – General Provisions

Building block: Scope

Key aspect: geographical and functional parameters of an arrangement

Scope defines the geographical, hydrographical, hydrological and substantive elements covered by an arrangement, as well as its limits. In so doing, provisions on scope usually describe the water, land, and associated resources, uses, and/or activities covered by the arrangement. States may decide to initially develop a broad arrangement on a shared basin or begin with subsidiary water bodies that form or cross borders between the States as a precursor to a larger, basin-wide arrangement.

What to consider when drafting a provision related to scope

- **Adopting a system-wide or basin approach.**

Arrangements on transboundary waters may apply to successive and/or contiguous rivers, the main river and/or its tributaries, surface waters and/or groundwater, terrestrial ecosystems and aquatic ecosystems. The practice observed in most contemporary arrangements on transboundary waters is to recognize the physical unity of a transboundary river basin, sub-basin and aquifer system. The 1997 Watercourses Convention, for example, uses the term "watercourse", which is defined as "a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus,"; while an "international watercourse" refers to "a watercourse, parts of which are situated in different States" (Art. 2 (a) and (b)).[20] An alternative approach is to refer to the basin or sub-basin. For example, the 1966 Helsinki Rules, use the term "international drainage basin" to mean, a "geographical area extending over two or more States determined by the watershed limits of the system of waters, including surface and underground waters, flowing into a common terminus".[21]

- **Functional scope.**

An agreement or arrangement on transboundary waters should also set out the types of uses or activities it covers. In this regard, State practice differs. Some arrangements focus on specific sectors, such as navigation or hydropower, while others have a broader scope that encompasses multiple uses and users. For example, the Mekong Agreement, 1995 includes in its scope "irrigation, hydro-power, navigation, flood control, fisheries, timber floating, recreation and tourism" (Art. 1).

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[20] See also the 1992 Water Convention (Art. 1(1)), and the International Law Commission (ILC), *Draft Articles on the Law of Transboundary Aquifers*, 2008, https://legal.un.org/ilc/texts/instruments/english/draft_articles/8_5_2008.pdf (Art. 2(c)).

[21] Articles on the Uses of the Waters of International Rivers ("Helsinki Rules"), adopted by the International Law Association at its 52nd Conference in Helsinki, August 1966, https://www.internationalwaterlaw.org/documents/intldocs/ILA/Helsinki_Rules-original_with_comments.pdf.

How could a provision on scope be framed? Examples from treaty practice

Box 5: Water Charter for the Volta River Basin, 2019

Water Charter for the Volta River Basin, 2019

Article 2: Sphere of application

1. The Water Charter shall apply to the Volta River and to all surface and groundwater resources and associated ecosystems found within the geographical limits of its catchment area.
2. The present Water Charter shall govern all public and private, ongoing and planned measures and activities in the Basin causing significant transboundary impacts on water resources, in particular those undertaken for:

[. . .]

j) Better knowledge about shared surface and underground water resources and associated ecosystems;

k) Better governance of the Basin's shared water resources;

l) The use and utilization of shared water resources to meet socio-economic and environmental needs likely to affect water resources or the environment; and

m) The protection, preservation and restoration of the ecological condition of water resources and associated ecosystems and the prevention of damage-causing situations.

3. An Appendix to the Water Charter shall establish the Map of the Volta River Basin.

Other examples: the Albufeira Convention, 1998, Arts 1 and 3; Treaty between the United States and Great Britain Relating to Boundary Waters and Questions Arising between the United States and Canada, 1909, Preliminary Article and Art. II; and Mekong Agreement, 1995 , Arts. 1, 5(A) and 5(B).

Supporting Resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp. 66-74.
- UNECE, Guide to Implementing the Water Convention, 2013, https://unece.org/environment-policy/publications/guide-implementing-water-convention, pp. 13-18.
- Arcari, M., "Scope of the Convention (Article 1)", in Boisson de Chazournes, L., *et. al.,* (eds.), *The UN Convention on the Law of the Non-Navigational Uses of International Watercourses – A Commentary* (Oxford University Press, 2018), pp. 31- 44.

Akosombo dam on Volta River in Ghana

Module 3 – Substantive content of the agreement or other arrangement

Building block: General substantive rights and obligations

Key aspect: Equitable and reasonable utilization

The principle of equitable and reasonable utilization is a widely accepted norm in the management of transboundary waters, as reflected in its inclusion within the two Global Water Conventions, and many existing arrangements related to transboundary waters.[22] With its basis in customary international law and the doctrine of "limited territorial sovereignty", the principle entitles each State sharing a basin, sub-basin or aquifer to an equitable and reasonable share in its use, development, and protection.[23] The International Law Commission (ILC) maintains that the equitable and reasonable principle provides a framework for reconciling competing interests with a view to "attaining maximum possible benefits for all watercourse States and achieving the greatest possible satisfaction of all their needs, while minimizing the detriment to, or unmet needs of, each".[24]

An equitable share in the use and benefits of transboundary waters may not necessarily be an equal share. In determining what is equitable and reasonable, a series of factors should be taken into account, including: "(a) geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character; (b) the social and economic needs of the watercourse States concerned; (c) the population dependent on the watercourse in each watercourse State; (d) the effects of the use or uses of the watercourses in one watercourse State on other watercourse States; (e) existing and potential uses of the watercourse; (f) conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect; (g) the availability of alternatives, of comparable value, to a particular planned or existing use".[25] While no use of water has inherent priority, "vital human needs" and the ecosystems of international watercourses are afforded special attention.[26]

Points to consider when drafting a provision on equitable and reasonable utilization

- **The relationship between this principle and other obligations of the arrangement.**

The principle of equitable and reasonable utilization is linked to other obligations such as the duty to take all appropriate measures to prevent significant harm,[27] the duty to cooperate,[28] and the obligation of notification and consultation on planned measures.[29] For example, notification of planned measures provides an important trigger for potentially affected States to assess whether those measures are consistent with the principle.

- **Including a provision on equitable and reasonable use emphasizes the obligation to share the benefits and costs of transboundary water cooperation.**

The inclusion of the principle of equitable and reasonable utilization within an arrangement provides the basis by which States can share the benefits of transboundary waters. This principle also recognizes that the territorial

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22 1997 Watercourses Convention, Arts. 5 and 6; Water Convention, Art. 2; 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, ("Mekong Agreement, 1995"), Art. 5. See also International Law Association, *The Berlin Rules on Water Resources,* 2004, https://www.internationalwaterlaw.org/documents/intldocs/ILA/ILA_Berlin_Rules-2004.pdf; ILC, *Draft Articles on the law of the non-navigational uses of international watercourses and commentaries thereto,* 1994, https://legal.un.org/ilc/texts/instruments/english/commentaries/8_3_1994.pdf ("1994 Draft Articles"), Art. 5(11); International Court of Justice, *Gabčíkovo-Nagymaros Project* (Hungary v. Slovakia), Judgement of 25 September 1997, https://www.icj-cij.org/en/case/92/judgments, paras. 85-87; and Permanent Court of Arbitration, *Indus Waters Kishenganga Arbitration* (Pakistan v. India), Partial Award of 18 February 2013, https://pca-cpa.org/en/cases/20, p. 134.

23 See 1994 Draft Articles, no. 22, Art. 5(2); and Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, https://www.researchgate.net/publication/230734482_UN_Watercourses_Convention_User's_Guide, p.100 and 106.

24 1994 Draft Articles, no. 22, Art. 5(3).

25 1997 Watercourses Convention, Art. 6.

26 1997 Watercourses Convention, Art.10 and *UN Watercourses Convention: User's Guide*, no. 23, p. 100.

27 See key aspect: Duty to take all appropriate measures to prevent significant harm, pp. 21-22.

28 See key aspect: General obligation to cooperate, pp. 25-26.

29 See key aspect: Notification and consultation concerning planned measures, pp. 71-72.

sovereign rights of States sharing basins, sub-basins and aquifers are limited by the obligation to respect the rights of other States sharing those waters, be they upstream or downstream.

- **States may provide a list of factors to take into account when determining what is equitable and reasonable or provide a general provision only.**

While some treaty practice simply sets out a general requirement that States utilize a particular river, lake or aquifer in an equitable and reasonable manner, other treaties also list the factors to be considered in determining what is equitable and reasonable. A provision enunciating the criteria to determine equitable and reasonable use allows States to identify some of the most important elements to consider in the sharing of transboundary waters, although the formulation of factors should not be exhaustive so that States may take into account additional criteria as circumstances change.

How could provisions be framed? Examples from treaty practice *(non-exhaustive)*

Box 6: Agreement on Co-operation on the Development, Management and Sustainable Utilization of the Water Resources of the Buzi Watercourse, 2019

Agreement on Co-operation on the Development, Management and Sustainable Utilization of the Water Resources of the Buzi Watercourse, 2019 ("Buzi Agreement, 2019)"

Article 8 – Equitable and Reasonable Utilisation

The Buzi Watercourse shall be managed and utilised in an equitable and reasonable manner.

2. In the application of Equitable Reasonable Utilisation, the Parties shall take into account all the relevant factors and circumstances including, the following:

a) geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;

b the social, economic, and environmental needs of the Parties;

c) the population dependent on the Buzi Watercourse in the territory of the Parties;

d) the effects of the use(s) of the Buzi Watercourse in either of the Parties' territories;

e) existing and potential uses of the waters of the Buzi Watercourse;

f) existing and planned infrastructure which has the capacity to regulate streamflow of the Watercourse;

g) conservation, protection, development and economic use of the water resources of the Buzi Watercourse and the costs of measures taken to that effect;

h) the availability of alternatives of comparable value, to a planned or existing use of the waters of the Buzi Watercourse; and

i) agreements in force between the Parties.

3. The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is an equitable and reasonable use, all relevant factors are to be considered together and a conclusion reached on that basis.

Other examples: Water Charter of the Chad Lake Basin, 2012, Arts. 10 and 13; Agreement on the Establishment of the Zambezi Watercourse Commission, 2004 ("Zambezi Agreement, 2004"), Art.13; Framework Agreement on the Sava River Basin, 2002 ("Sava Agreement, 2002"), Art. 7; and Guarani Aquifer Agreement, 2010, Art. 4.

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp 100-116.
- UNECE, *Guide to Implementing the Water Convention*, 2013, pp. 22-25.
- Salman, S.M.A., "Equitable and Reasonable Utilization and the Obligation Against Causing Significant Harm: Are they Reconcilable?", *American Journal of International Law Unbound*, vol. 115, 2021.

Module 3 – Substantive content of the agreement or other arrangements

Building block: General substantive rights and obligations

Key aspect: Duty to take all appropriate measures to prevent significant harm

Another well-established principle of customary international law is the obligation upon States to take all appropriate measures to prevent significant harm to other States sharing transboundary waters. This includes harm to human health or safety, impeding the use of the waters for beneficial purposes, and/or harm to the living organisms of the watercourse systems.[30] The principle does not impose an absolute obligation of no harm but rather requires that States *adopt all appropriate measures* to prevent significant harm. Guidance on the type of measures that might be adopted are listed in Article 3 of the 1992 Water Convention, but States should assess what measures are "appropriate" within their particular circumstances.[31] In this regard, "appropriate" is considered as embedding a due-diligence standard. According to the International Court of Justice in *Pulp Mills on the River Uruguay*, the due-diligence duty "entails not only the adoption of appropriate rules and measures, but also a certain level of vigilance in their enforcement and the exercise of administrative control applicable to public and private operators, such as the monitoring of activities undertaken by such operators, to safeguard the rights of the other party".[32]

Points to consider when drafting a provision on significant harm

- **Some arrangements use the term transboundary impact whereas other arrangements refer to significant harm**

Some arrangements, in line with the 1997 Watercourses Convention, oblige their Parties to take all appropriate measures to prevent the causing of significant harm to any other party (see for example, Art. 7(3) of the Agreement for the Establishment of the Orange-Senqu Commission, 2000, "ORASECOM Agreement, 2000"), whereas other treaties align more to the 1992 Water Convention, by referring to "transboundary impact" (see for example the Agreement between Finland and Sweden Concerning Transboundary Rivers, 2009; or "transboundary adverse impact", see for example the Lake Tanganyika Convention, 2003). The Sava Agreement, 2002 even includes a provision on "transboundary impact" (Art. 8) and one on "no harm" (Art. 9). The Sava Agreement, 2002 supports analysis of the relationship between the 1992 Water Convention and the 1997 Watercourse Convention, which suggest that both approaches are complementary.[33]

- **Including a provision on significant harm helps States to adopt measures to mitigate or eliminate environmental damage.**

The inclusion of a provision on significant harm assists States in the implementation of obligations of international environmental law which often bind States sharing transboundary waters, and also provides a bridge between substantive and procedural obligations. For instance, the adoption of measures and tools, such as the environmental impact assessment, may be seen as appropriate measures to prevent significant harm.[34]

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30 *UN Watercourses Convention: User's Guide*, no. 23, p.117.

31 Ibid., p.119.

32 International Court of Justice, *Pulp Mills on the River Uruguay (Argentina* v. *Uruguay)*, Judgment of 20 April 2010, https://www.icj-cij.org/en/case/135/judgments ("Pulp Mills case"), para. 197.

33 Tanzi, A., *The Economic Commission for Europe Water Convention and the United Nations Watercourses Convention – An analysis of the harmonised contribution to international water law,* 2015, pp. 28-31.

34 See building block: Strategic and environmental impact assessment, pp. 75-78.

- **No harm versus no significant harm.**

A distinction can be made between "no harm" and "significant harm". While the first would forbid all alterations of waters, the second does not cover trivial injuries to the territory and environment of another State. The ILC, in its work on the 1997 Watercourses Convention, embraced the following definition of "significant harm": "'harm' is used in its factual sense: there must be a real impairment of use, injury to health or property, or a detrimental effect upon the ecology of the watercourse".[35]

- **Recognizing that harm can also flow upstream.**

Upstream States may not only cause harm to downstream States. Upstream States can also be affected by the potential foreclosure of future uses of water caused by prior use and the claiming of rights to such water by downstream States.[36] In this context, it should be noted that both the 1997 Watercourses Convention and the 1992 Water Convention make no distinction between the rights and obligations of upstream and downstream States. There are also some treaties which explicitly address the concept of foreclosure of future uses. Article 4 of the Charter of the Waters of the Senegal River, 2002, for example, stresses the importance of informing all riparian States of the possibility of future projects, irrespective of their location within the river basin.

How could provisions be framed? Examples from treaty practice *(non-exhaustive)*

Box 7: Guarani Aquifer Agreement, 2010

Guarani Aquifer Agreement, 2010

Article 6

Parties that perform activities or work for utilizing the water resources of the Guarani Aquifer System, in their respective territories, shall adopt all the necessary measures to avoid causing significant harm to the other Parties or the environment.

Article 7

When causing significant harm to one or more Parties or the environment, the Party who caused the significant harm shall adopt all the necessary measures to eliminate or mitigate such harm.

Other examples: Dniester Treaty, 2012, Art. 12; and the Statute of the River Uruguay, 1975, Chapter IX.

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp. 117-121.
- UNECE, *Guide to Implementing the Water Convention*, 2013, pp. 19-21.
- Tanzi, A., The Economic Commission for Europe Water Convention and the United Nations Watercourses Convention – An analysis of the harmonised contribution to international water law, 2015, https://unece.org/DAM/env/water/publications/WAT_Comparing_two_UN_Conventions/ece_mp.wat_42_eng_web.pdf, pp. 28-31.

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[35] ILC, Fourth Report on the Law of the Non-navigational uses of International Watercourses, https://legal.un.org/ilc/documentation/english/a_cn4_412.pdf, p. 238.

[36] See Salman, S.M.A., "Downstream riparians can also harm upstream riparians: the concept of foreclosure of future uses", *Water International*, vol. 35(4), 2010, pp. 350-384.

Module 3 – Substantive content of the agreement or other arrangements

Building block: General substantive rights and obligations

Key aspect: General obligation to protect ecosystems

An ecosystem consists of living and non-living components that are interdependent and function as a community.[37] The 1997 Watercourse Convention provides that "[W]atercourse States shall, individually and, where appropriate, jointly, protect and preserve the ecosystems of international watercourses" (Art. 20).[38] This requirement to protect ecosystems which is the bedrock of environmental protection can be seen as an extension of the general principle of equitable and reasonable utilization.[39] In addition, the duty to take appropriate measures to prevent, control and reduce any transboundary impact includes the protection of ecosystems through, for example, pollution prevention or the avoidance of introduction of alien or new species that may have detrimental effects on the ecosystem. The obligation to protect ecosystems requires States sharing transboundary waters to take various measures to conserve water resources, including regulating the flow and controlling floods, pollution, erosion, drought, and saline intrusion.[40] The duty to protect ecosystems of transboundary waters may help States to implement their obligations under MEAs, and support progress towards the SDGs, such as those on aquatic and terrestrial ecosystems (SDGs 14 and 15) and on climate change (SDG 13).

Points to consider when drafting a provision on ecosystem protection

- **An arrangement may include a provision on ecosystem protection in both general and/or specific terms.**

States sharing transboundary waters may provide a general requirement to protect ecosystems and/or include specific guidelines and standards, such as on the discharges of wastes and polluting substances. Such standards help to ensure the good status of transboundary waters and the services that ecosystems provide.[41]

- **States sharing transboundary waters may choose to operationalize their duty to protect ecosystem by identifying specific species or areas for protection.**

The inclusion of the duty to protect ecosystems may assist States to better protect important species in those ecosystems and to contribute to biodiversity promotion and conservation while strengthening ecosystem resilience. This may assist States in implementing their obligations under the Biodiversity Convention or the Ramsar Convention.

- **States may include an e-flow requirement as a specific measure to protect ecosystems.**

The inclusion of provisions on e-flow, or environmental flow of transboundary waters, is a specific means by which to safeguard ecosystems, and a way to support the implementation of the water-energy-food nexus. It helps to allocate water among its multiples uses, e.g., agriculture, industry, energy and ecosystems within the limits of available supply and under a changing climate. The adoption of an environmental flow regime requires negotiations to reach a consensus on flow allocation among stakeholders, which may be included in an arrangement itself, such as in the Annex, or the Parties may commit to developing such a flow requirement as part of the implementation of the arrangement.

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37 1994 Draft Articles, no. 22, p. 119 .

38 See also Arts. 21-26.

39 1994 Draft Articles, no. 22, p. 119.

40 Ibid.

41 See, for example, the criteria for good water status, as set out in EU Directive 2000/60/EC establishing a framework for the Community action in the field of water policy, 23 October 2000 ("EU Water Framework Directive"), https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32000L0060..

Some arrangements set out specific requirements, such as to "take all reasonable measures to ensure stream flows adequate to protect the biological chemical and physical integrity of international watercourse, including their estuarine zones".[42] Article 16 (3) of the Albufeira Convention, 1998, for example, obliges its Parties to determine the flow regime of transboundary waters necessary to ensure their good status (Art. 16(1)). Similarly, Article 9 (3) of the Tripartite Interim Agreement for Co-operation on the Protection and Sustainable Utilization of the Water Resources of the Incomati and Maputo Watercourses ("Inco-Maputo Agreement, 2002") commits its Parties to a flow regime, and sets out the criteria for establishing such a regime, based on "the need to ensure water of sufficient quantity and acceptable quality to sustain the watercourse and their associated ecosystems" (see Box 8).

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 8: Inco-Maputo Agreement, 2002

Article 9. Flow Regimes

(1) The agreed flow regime of the Incomati watercourse is contained in Annex I, which complements the flow regime as determined in the Piggs Peak Agreement, and the agreed flow regime of the Maputo watercourse is contained in the same Annex.

(2) Any abstraction of waters from the Incomati or Maputo watercourses, regardless of the use or geographic destination of such waters, shall be in conformity with the flow regimes of Annex I and relevant provisions of this Agreement and its Annexes.

(3) The Parties have considered the following criteria in establishing the flow regimes contained in Annex I:
   a) The geographic, hydrological, climatic and other natural characteristics of each watercourse;
   b) the need to ensure water of sufficient quantity with acceptable quality to sustain the watercourses and their associated ecosystems;
   c) any present and reasonably foreseeable water requirements, including afforestation;
   d) existing infrastructure which has the capacity to regulate streamflow of the watercourses; and
   e) agreements in force among the Parties.

(4) The following short to medium term water requirements of each of the Parties are recognised in particular:
   a) The strategic importance to Mozambique of augmenting the water supplies to the city of Maputo and its metropolitan area from one or both of the Incomati and Maputo watercourses;
   b) the importance to Swaziland of developing the Lower Usuthu Smallholder Irrigation Project in the Usuthu River catchment; and
   c) the importance to South Africa of establishing and developing emerging irrigation farmers in the Incomati River catchment.

(5) The additional water requirements of the city of Maputo, for which additional water must be secured, have been reserved in Annex I.

Other examples: Niger Basin Water Charter, 2008, Art. 1; Sava Agreement, 2002, Art. 11

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp.164-172.
- UNECE, *Guide to Implementing the Water Convention*, 2013, pp. 26-27.
- McIntyre, O., *Environmental Protection of International Watercourses under International Law* (Ashgate, 2007).
- Brels, S., Coates, D., and Loures, F., *Transboundary Water Resources Management: the role of international watercourse agreements in implementation of CBD, Secretariat of the Convention on Biological Diversity*, 2008, https://www.informea.org/en/literature/transboundary-water-resources-management-role-international-watercourse-agreements .
- IUCN, *Environmental flows*, https://www.iucn.org/theme/water/our-work/past-projects/environmental-flows.

[42] Utton, A.E. and Utton, J,, "Adequate stream flows" in Bogdanovic (ed), *International Law of Water Resources – Contribution of the Internaitonal Law Association (1954-2000)* (Kluwer, 2001), p. 387.

Module 3 – Substantive content of the agreement or other arrangements

Building block: General substantive rights and obligations

Key aspect: General obligation to cooperate

The obligation to cooperate in agreements or other arrangements on transboundary waters derives from the Charter of the United Nations (Art. 1(3)) and the Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations, of 1970.[43] The ILC points out that this obligation not only provides the basis for the equitable use of transboundary waters and their protection, but also helps to implement procedural norms such as the notification of planned measures.[44] For transboundary waters, cooperation may be bilateral or regional, and is fundamental to international water law and diplomacy.

Arrangements on transboundary waters often include a general obligation to cooperate. Article 8 of the 1997 Watercourses Convention, for example, provides that: "[w]atercourse States shall cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilization and adequate protection of an international watercourse". The obligation to cooperate may form the basis for the establishment of joint bodies or the adoption of arrangements on transboundary waters. The 1992 Water Convention, for example, requires its Parties to cooperate through, "bilateral or multilateral agreements or other arrangements and associated joint bodies with States sharing transboundary waters" (Art. 9).[45]

Points to consider when drafting a provision on the duty to cooperate

- **The duty to cooperate may be expressed in both general and/or specific terms.**

The duty to cooperate has both substantive and procedural elements. It is key to operationalizing the principle of equitable and reasonable utilization and the obligation to take appropriate measures to prevent significant harm. It is also the basis for several specific procedural requirements, such as the duty to exchange data and information between States sharing transboundary waters,[46] to enter into consultations and joint activities in specific areas, or to establish a joint body.[47] The duty to cooperate may also be expressed in terms of subjects of cooperation between States sharing transboundary waters, including irrigation, hydro-power, navigation, flood control, fisheries, timber floating, recreation and tourism.

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43 See General Assembly, *Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations*, 1970, http://caid.ca/UNDecFreiRelCoo1970.pdf.

44 1994 Draft Articles, no. 22, p. 105. See also Article 3(5) of the Revised SADC Protocol, 2000, stating that "State Parties undertake to pursue and establish close cooperation with regard to the study and execution of all projects likely to have an effect on the regime of the shared watercourse".

45 *Guide to Implementing the Water Convention,* no. 3, p. 63.

46 See building block: Regular exchange of data and information, pp. 69-70.

47 See building block: Establishment of joint bodies, pp. 87-89.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 9: Mekong Agreement, 1995

Mekong Agreement, 1995

Art. 1 Areas of Cooperation

To cooperate in all fields of sustainable development, utilization, management and conservation of the water and related resources of the Mekong River Basin including, but not limited to, irrigation, hydro-power, navigation, flood control, fisheries, timber floating, recreation and tourism, in a manner to optimize the multiple-use and mutual benefits of all riparians and to minimize the harmful effects that might result from natural occurrences and man-made activities.

Other examples: Water Charter for the Volta River Basin, 2019, Art. 5; Sava Agreement, 2002, Art.3; Convention on Co-operation for the Protection and Sustainable Use of the Danube River, 1994 ("Danube Convention, 1994"), Art. 2.

Confluence of Nam Khan and Mekong Rivers in Luang, Prabang, Laos

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp. 123-125.
- UNECE, *Guide to Implementing the Water Convention*, 2013, pp. 32-39.
- Leb, C., "General Obligation to cooperate and Regular Exchange of Data and Information (Article 8 and 9)", in Boisson de Chazournes, L., *et. al.* (eds.), *The UN Convention on the Law of the Non-Navigational Uses of International Watercourses – A Commentary* (Oxford University Press, 2018), pp. 123-140.

Lake Superior, Marquette, Michigan, USA

Module 3 – Substantive content of the agreement or other arrangements

Building block: Principles and other guiding concepts

Key aspect: Precautionary principle

When accepted by the Parties, the precautionary principle can impose both substantive and procedural obligations upon States.[48] In essence, the principle requires that States take action to anticipate, prevent or minimize the possibility of serious or irreversible harm to transboundary waters even when scientific knowledge is incomplete or inconclusive.[49] Thus, the trigger for taking precautionary measures is the existence of a concern that probable damage may be caused despite lack of scientific certainty. There is therefore no need for confirmation of incontrovertible scientific evidence before taking action.[50] Numerous authoritative international instruments make reference to the precautionary principle.[51]

Points to consider when including a provision on the precautionary principle

- **Reference to the precautionary principle within an arrangement helps to ensure that States prevent significant harm to transboundary waters.**

The precautionary principle underpins other principles, including the principle to prevent significant harm.[52] Climate change adaptation measures may also find their basis in the precautionary principle. The application of the precautionary principle may involve a diminution of economic benefits and opportunity costs. However, its inclusion in arrangements on transboundary waters can be an important tool for the adoption of sound policies and laws. This is particularly true in the context of environmental change, including a reduction of available water resources combined with population growth and increasing energy needs.

- **States sharing transboundary waters may choose to operationalize the precautionary principle through the adoption of specific environmental standards.**

The explicit inclusion of the precautionary principle within an arrangement on transboundary waters helps to ensure that Parties interpret environmental obligations contained in the arrangement within the context of scientific uncertainty, such as future scenarios concerning the impacts of climate change.

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48 See e.g. 1992 Water Convention, Arts. 2, 9(j), and 16; and 1997 Watercourses Convention, Arts. 7, 12, and 20-23; and *Pulp Mills case* no. 32, paras. 203-205.

49 The 1992 Water Convention, Art. 2 (5)(a). See e.g., General Assembly, *Declaration on Environment and Development* ("Rio Declaration"), A/CONF.151/5/Rev.1, 14 June 1992, https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.151_26_Vol.I_Declaration.pdf, Principle 15 (which uses "precautionary *approach*" rather than "principle" or measures). See also, *Draft Articles on the Law of Transboundary Aquifers*, no. 20, Art. 12.

50 *UN Watercourses Convention: User's Guide*, no. 23, p.166; and De Sadeleer N., and Khayli, M.A., "The role of the precautionary principle in the convention on the protection and use of transboundary watercourses and international lakes", in Tanzi, A., *et. al.,* (eds.), *The UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes - Its Contribution to International Water Cooperation*, (Brill, 2015, p. 175). See also Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992, Art. 3(2).

51 See Convention on Cooperation for the Protection and Sustainable Use of the Danube ("Danube Convention, 1994"), Art. 2(4); Rhine Convention, 1999, Art. 4; 1992 Water Convention, Art. 2(5)(a); and Climate Change Convention, 1992, Art. 3.

52 See *Pulp Mills case* no. 32, para. 164.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 10: Great Lakes Agreement, 2012

Great Lakes Agreement, 2012

Article 2(4) Principles and Approaches

The Parties shall be guided by the following principles and approaches in order to achieve the purpose of this Agreement …

…

(i) precaution - incorporating the precautionary approach, as set forth in the *Rio Declaration on Environment and Development*, the Parties intend that, 'Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation';

Other examples: Water Charter of the Lake Chad Basin, 2012, Art. 7; and Rhine Convention, 1999, Art.4.

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, p. 166.
- De Sadeleer, N., and Khayli, M.A., "The role of the precautionary principle in the convention on the protection and use of transboundary watercourses and international lakes," in Tanzi A., *et. al.,* (eds), *The UNECE Convention on the Protection and Use of Transboundary Watercourses and international Lakes: its contribution to international water cooperation* (Brill, 2015), pp.160-175.
- Trouwborst, A.,"Prevention, precaution, logic and law: the relationship between the precautionary principle and the preventative principle in international law and associated questions," *Erasmus Law Review,* vol. 2(2), 2009.

View on the Epupa Falls, Kunene River, near the Angola-Namibia border

Module 3 – Substantive content of the agreement or other arrangements

Building block: Principles and other guiding concepts

Key aspect: Sustainability

Sustainability has been a key priority of the international community, as evidenced by the 2030 Agenda for Sustainable Development adopted by the United Nations General Assembly in 2015, which *inter alia* recognizes the importance of ensuring the sustainable use of water resources (Goal 6). Interpreted in line with the concept of sustainable development, the notion of sustainability pervades the 1992 Water Convention and the 1997 Watercourses Convention, and has been included as a guiding principle within arrangements for transboundary waters.[53]

Points to consider when including a provision on sustainability

- **Reference to sustainability within an arrangement promotes the inclusion of the different dimensions of water, i.e., environmental, social and economic functions.**

The inclusion of sustainability as a guiding principle within an arrangement for transboundary waters assists States in accounting for environmental and social factors when developing economic projects. It helps Parties account for the balance between environmental, social and economic interests in the management and uses of transboundary waters.

- **Reference to sustainability helps to take into account the collective and inter-generational dimension of water resources management.**

Including sustainability as a guiding principle within an arrangement may help States sharing transboundary waters adopt collective actions to address the risks of environmental degradation. It also guides States to consider the rights of both present and future generations in accordance with the principle of intra- and inter-generational equity.

How could provisions be framed? Examples from treaty practice *(non-exhaustive)*

Box 11: Great Lakes Agreement, 2012

Great Lakes Agreement, 2012"

Article 2: Purpose, principles and approaches

[. . .]

(*m*) sustainability – considering social, economic and environmental factors and incorporating a multi-generational standard of care to address current needs, while enhancing the ability of future generations to meet their needs;

Other examples: Water Charter of the Lake Chad Basin, 2012, Art.7; Rhine Convention, 1999, Art. 4 (g).

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012.
- Rieu-Clarke, A., "The sustainability principle" in Tanzi, A., *et al.*, (eds), *The UNECE Convention on the Protection and Use of Transboundary Watercourses and international Lakes: its contribution to international water cooperation* (Brill, 2015), pp.195-210.

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[53] See the 1992 Water Convention, Arts. 1 (1), 2 (2), 2 (5) I and 3 (1) (i); and the 1997 Watercourses Convention, Articles 5, 20 and 24. See also *Gabčíkovo-Nagymaros* case no. 22, para.140. An array of binding and non-binding instruments also make reference to sustainability, including the Declaration of the United Nations Conference on the Human Environment, 1972 ("Stockholm Declaration"), https://documents-dds-ny.un.org/doc/UNDOC/GEN/NL7/300/05/IMG/NL730005.pdf?OpenElement; the 1992 Rio Declaration, no. 49; the International Law Association, *New Delhi Declaration of Principles of International Law Relating to Sustainable Development*, 2002, https://www.ecolex.org/details/literature/new-delhi-declaration-of-principles-of-international-law-relating-to-sustainable-development-mon-070850/; the IUCN, *Draft Covenant on Environment and Development*, 2017, https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=2443, Art. 1.

Module 3 – Substantive content of the agreement or other arrangements

Building block: Principles and other guiding concepts

Key aspect: Polluter/user-pays principle (PPP)

The "polluter-pays principle" (PPP) stipulates that the "costs of pollution prevention, control and reduction measures shall be borne by the polluter".[54] It has a primarily domestic nature i.e., it regulates relationships within the territory of a Party rather than between Parties. However, the PPP is one of the principles that can guide States when trying to prevent significant adverse transboundary effects. It has both preventive (cost of *pollution prevention)* and curative (*liability principle* - the costs of "depuration"*)* dimensions.[55] The PPP is one of the core principles of the 1992 Rio Declaration on Environment and Development (Principle 16). PPP can be distinguished from "compensation" in the sense that, even if damages have already been paid, it does not relieve the polluter from the obligation of preventing pollution and of paying the cost thereof.[56] In relation to situations where identifying the cause-effect relationship cannot be established or the polluter identified, the possibility of establishing special funds is recommended.[57]

Points to consider when including a provision on the polluter-pays-principle

- **Reference to the PPP within an arrangement helps to allocate responsibilities in the case of a damage to transboundary resources.**

By assigning responsibility for damages caused to the water system, PPP encourages States to prevent damage to transboundary waters by incentivizing users to use water resources rationally and to prevent, control and reduce pollutants. The principle encourages private actors to use cleaner products and technologies.

- **Reference to the PPP within an arrangement encourages States to put in place domestic measures to allocate financial responsibility for significant harm and prevention.**

While the PPP has a primarily national focus, the inclusion of such a principle in an agreement or other arrangement on transboundary waters encourages States to adopt and/or maintain the necessary measures to support its implementation at the national level, such as the allocation of financial responsibility at the national level, by ensuring that financial cost of polluting operational activities and accidental pollution activities are supported by the private actors who undertake polluting activity. Its inclusion in an arrangement on transboundary waters may also facilitate the harmonization of legislation that make reference to the PPP within the different State Parties.

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54 See Dniester Treaty, 2012, Art. 4(2)(d). See also 1992 Water Convention, Art. 2(5),

55 See UNECE, *Code of Conduct on Accidental Pollution of Transboundary Inland Waters*, 2009, https://unece.org/environment-policy/publications/code-conduct-accidental-pollution-transboundary-inland-waters, Section XV, para. 3; and ILC, *Draft principles on the allocation of loss in the case of transboundary harm arising out of hazardous activities (with commentaries)*, 2006, https://legal.un.org/ilc/texts/instruments/english/commentaries/9_10_2006.pdf, Principle 3, para.12.

56 UNECE, *Guide to Implementing the Water Convention*, no. 3, para. 133 (c).

57 See UNECE, Recommendation to ECE Governments on the Protection of Soil and Aquifers Against Non-Point Source Pollution, 1988, https://unece.org/DAM/env/water/documents/Reco_%20Protect.%20of%20Soil%20&%20Aquifers.pdf, recommendation 29.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 12: Agreement on the Protection of River Scheldt, 1994

Agreement on the Protection of the River Scheldt, 1994

Article 3: Principles of cooperation

(2) The Contracting Parties shall be guided by the following principles in their action:

[. . .]

(d) The polluter pays principle according to which the costs of pollution prevention, control and reduction of measures, shall be borne by the polluter.

Other examples: Danube Convention, 1994, Art. 2 (4); Addendum to the Agreement establishing a uniform river regime and creating CICOS, 2007, Art. 4.

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp. 28-31.
- UNECE, *Guide to Implementing the Water Convention*, 2013, pp. 28-31.
- Duvic-Paoli, L-A., and Dupuy, P-M., "The polluter-pays principle in the 1992 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes," in Tanzi, A., *et al.,* (eds), *The UNECE Convention on the Protection and Use of Transboundary Watercourses and international Lakes: its contribution to international water cooperation* (Brill, 2015), pp.176-194.

Lake Victoria, Ukurewe Island, Tanzania

Module 3 - Substantive content of the agreement or other arrangement

Building block: Principles and guiding concepts

Key aspect: Human rights to safe drinking water and sanitation

The United Nations General Assembly and Human Rights Council recognized the right to safe drinking water and sanitation in 2010.[58] Both rights are derived from the right to an adequate standard of living contained within the Universal Declaration of Human Rights. While safe drinking water is strictly linked to human survival, the lack of adequate sanitation affects the potability of water, thus affecting human health, and can have a profound impact on an individual's living conditions, as well as affecting personal security and dignity. These rights are inextricably related to the right to the highest attainable standard of health, which is usually interpreted broadly to cover not only the provision of health care but also the promotion of those elements and conditions that allow individuals to be healthy.[59]

The United Nations General Assembly and Human Rights Council resolutions do not explicitly address the relationship between the rights to safe drinking water and sanitation, and transboundary waters.[60] However, some instruments related to transboundary waters make reference to the rights to safe drinking water and sanitation.[61] There is also an emerging international practice calling for the inclusion of the right to safe drinking water and sanitation. For example, the Guidelines on the Human Right to Water in Africa adopted in 2020 by the African Commission on Human and Peoples' Rights encourage States to "explicitly recognise the right to water in transboundary water agreements" and considers the right to water as "as one of the relevant factors that determine whether the use of the resource is equitable and reasonable".[62]

The rights to safe drinking water and sanitation are also closely related to ensuring non-discrimination against women.[63] Amongst other things, adequate drinking water and sanitation facilities (with appropriate equipment for menstrual hygiene management) in educational institutions, as well as public places, are keys to guaranteeing the right to education for all girls and the effective involvement of women in public affairs. This steers a State towards achieving the SDGs.

Points to consider when drafting a provision on human rights to water and sanitation

- **The two rights can complement and influence the substantive content of an arrangement.**

The rights to safe drinking water and sanitation can influence provisions related to water uses and allocation and inform their interpretation and application. This is the case, for example, in relation to the principle of equitable and reasonable utilization. The rights to safe drinking water and sanitation should therefore be considered within the factors to be weighed in order to determine the "equitable" and "reasonable" character of a given uses of transboundary waters.[64] This relationship is referred to in

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58 General Assembly Resolution 64/292, https://daccess-ods.un.org/TMP/9676144.71912384.html; Human Rights Council Resolution 15/9, https://www.right-docs.org/doc/a-hrc-res-15-9/.

59 See Committee on Economic, Social and Cultural Rights (CESCR) *General Comment 14: The Right to the Highest Attainable Standard of Health (Art. 12)*, 2000, https://www.refworld.org/pdfid/4538838d0.pdf.

60 See General Assembly resolution 64/292, no. 58; and Human Rights Council resolution 45/8, no. 58.

61 See, for example, the Charter of Waters of the Senegal River, 2002 (Art. 4). Also, the Treaty between the Government of the Republic of Moldova and the Cabinet of Ministers of Ukraine on Cooperation in the Field of Protection and Sustainable Development of the Dniester River Basin ("Dniester Treaty, 2012") directs States to consider the provision of safe water as a vital human need. See also the 2018 EU Council, *Conclusions on Water Diplomacy*, https://unece.org/environment/press/eu-conclusions-water-diplomacy-promote-accession-and-implementation-water, which include reference to both the human rights to water and sanitation and transboundary waters.

62 African Commission on Human and Peoples' Rights, Guidelines on the Right to Water in Africa, 2020, https://www.achpr.org/legalinstruments/detail?id=71, para. 35.2. See also CESCR, *General Comment No. 15*: The Right to Water (Arts. 11 and 12 of the Covenant), 2003, https://www.refworld.org/pdfid/4538838d11.pdf, which explicitly called for international cooperation: "[t]o comply with their international obligations in relation to the right to water, States Parties have to respect the enjoyment of the right in other States. International cooperation requires States Parties to refrain from actions that interfere, directly or indirectly, with the enjoyment of the right to water in other States", para. 31.

63 See in particular the Convention on the Elimination of All Forms of Discrimination against Women (Art. 14).

64 For a formulation of the principle of equitable and reasonable utilization, as well as factors relevant to equitable and reasonable utilization, see for instance Articles 4 and 5 of the 1997 Watercourses Convention.

Article 10 of the 1997 Watercourses Convention, which notes that "special regard" should be given to "vital human needs", when determining what is equitable and reasonable.[65] While broader, the term "vital human needs" would encompass the provision of water to meet basic drinking and sanitation needs.

Box 13: Human Rights Council resolution 45/8

Human Rights Council resolution 45/8

In 2020, the Human Rights Council reaffirmed that:

- The human right to safe drinking water entitles everyone, without discrimination, to have sustained access to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use.
- The human right to sanitation entitles everyone, without discrimination, to have physical and affordable access to sanitation, in all spheres of life, that is safe, hygienic, secure, socially and culturally acceptable, and provides privacy and ensures dignity.

The Human Rights and Alliance of Civilizations Room at the Palace of Nations, Geneva

[65] Vital human needs are defined as, "sufficient water to sustain human life, including both drinking water and water required for the production of food in order to prevent starvation", 1997 Watercourses Convention, Statements of Understanding (1997); see UN General Assembly, *Summary Record of the 57th Meeting: Sixth Committee*, 1997, https://digitallibrary.un.org/record/243256?ln=en.

- **Implementing a general right to safe drinking water and sanitation supports the rules on the protection of water quality and on the prevention, reduction and control of water-related diseases.**

Lack of adequate water supply and of effective systems for sanitation can cause pollution, disrupt the functioning of ecosystems and give rise to water-borne diseases, such as diarrhoea and cholera amongst others.

- **The two rights in question help reinforce procedural features, ownership and sustainability of an arrangement on transboundary waters.**

The human rights to drinking water and sanitation entitle individuals to have access to water and sanitation-related information, to be effectively involved in decision-making and to be able to resort to redress mechanisms when their rights have been violated. In turn, this helps reinforce public participation, ownership by communities and sustainability of the legal framework. The two rights in question can also complement provisions on strategic and environmental impact assessment, which can include human rights impact assessment when planned measures could potentially affect communities and individuals living in a transboundary basin. In this way, environmental justice considerations are achieved.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 14: Charter of Waters of the Senegal River, 2002

Charter of Waters of the Senegal River, 2002

Chapter 3. – Principles and Modalities of Water distribution between uses

Article 4

The use of the waters of the River is open to each riparian State, as well as to the persons being on its territory in accordance with the principles and modalities defined by the present Charter.

The distribution of the waters between the uses is based in particular on the following general principles:

(…)

The guiding principles of any distribution of the waters of the River aimed at ensuring the full enjoyment of the resource by the populations of the riparian States, while respecting the safety of persons and works, as well as the fundamental human right to safe water, in the perspective of sustainable development.

Other examples: Dniester Treaty, 2012, Art. 4(2)(c).

Supporting resources (*non-exhaustive*)

- United Nations Committee on Economic, Social and Cultural Rights, *General Comment No. 15*, 2003, https://www.refworld.org/pdfid/4538838d11.pdf.
- Tanzi, A., "Reducing the gap between international water law and human rights law: The UNECE Protocol on Water and Health", *International Community Law Review*, Vol. 12(3), 2010.
- African Commission on Human and Peoples. Rights, *Guidelines on the Right to Water in Africa*, 2019, https://www.achpr.org/legalinstruments/detail?id=71 .
- See *EU Guidelines on Safe Drinking Water and Sanitation*, 2019, https://eeas.europa.eu/sites/default/files/hr_guidelines_sanitation_en.pdf.

Nile River, Egypt

Module 3 – Substantive content of the agreement or arrangement

Building block: Water management and protection issues

Key aspect: Water allocation and flow regulation

Water allocation determines who benefits from shared water resources, for which purposes, in what quantity and quality, where and in what point in time. Handling the growing water demands of several sectors, managing water shortages and climate change requires the co-ordinated, sustainable and equitable management of water allocations and flows, particularly in a transboundary context. Allocation models make it possible for States sharing transboundary waters to simulate development scenarios in the short, medium and long terms. Such models make it possible to optimize investments and improve the division of benefits among States. Assessing benefits is related to planning investments in the basin, and a practical tool for transboundary cooperation in the area of water, which makes it possible to identify potential inequalities and promote co-ordinated efforts.

Box 15: Coordinated management of dams in the Niger Basin

Coordinated management of dams in the Niger Basin

There is major potential for regional development in the Niger Basin, particularly where irrigation and hydroelectricity are concerned. A key challenge for the Niger Basin Authority (NBA) and its nine Member States is attaining overall coherence in developing and managing the basin as a whole. Large structuring dams currently in place include the Sélingué in Mali, the Kinji, Jebba, Shiroro, Dadin Kowa in Nigeria and the Lagdo in Cameroon. The projects underway are the Fomi and Taoussa in Guinea and Mali and the Kandadji in Niger.

Annex 2 of the Niger Basin Water Charter relating to the Water Regulations for the Coordinated Management of the Structuring Dams was drafted and then approved in late 2019 by the NBA Council of Ministers. Its implementation is based on an updated allocation model and a tactical management tool. In addition to collecting data and operationalizing expectations, potential improvements to the joint management of dams in the Niger Basin are particularly focused on the implementation by the Permanent Technical Committee, which is responsible for enforcing the Coordinated Management Regulation.

Niger River, Bamako, Mali

Points to consider when drafting a provision on water allocation and flow regulation

- **The inclusion of provisions on water allocation makes it possible to choose a shared development scenario and ensure consensual management of transboundary waters.**

Allocation tools are based on use models that make it possible to simulate hydrological operations and allocation between sectors (irrigation, industries, drinking water, hydropower, ecosystem needs, etc.) based on use, seasons and States. Some tools are also able to model water quality. States can use quantitative models to simulate various scenarios, in particular hydrometeorological scenarios. These scenarios might also focus on various development options, particularly new transboundary facilities, and combine them within the basin. The scenarios studied must be drafted and approved consensually by States sharing transboundary waters, and might be included within an arrangement, e.g., an annex, or within a supplementary instrument.

- **The inclusion of provisions on flow regulation relies on the development of facilities which make it possible to regulate flows. These facilities can be managed based on shared methods and built in a joint and coordinated way.**

Flows are regulated through the management of hydraulic facilities and infrastructures. States sharing transboundary waters often face the challenge of achieving general coherence in developing and managing basin waters, selecting the most relevant projects and coordinating them. Joint water regulation aims to define the principles, general rules, methods and limits of the joint management of current and future facilities in the basin, while taking the general interest into consideration. The rules and principles of joint management of infrastructure may be drafted at the "strategic" level, based on hydrological and hydraulic objectives to be attained, and at the "tactical" level, i.e., for operational management.

- **Arrangements on transboundary water allocation should be adaptable.**

Arrangements should be adaptable in the medium and longer terms to changing hydrological, climatic and other related factors. Allocations by percentages instead of absolute amounts, periodic review and using objective thresholds to address the need for exceptional deviations are approaches that can embed adaptability into provisions.

View over Songhua River, one of Amur's major tributaries in Harbin, China

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 16: Convention on the Cooperation for the Protection and Sustainable Use of the Waters of the Luso-Spanish River Basins, 1998

Convention on the Cooperation for the Protection and Sustainable Use of the Waters of the Luso-Spanish River Basins, 1998 ("Albufeira Convention, 1998")

Article 16 – River Flows

1. The Parties within the Commission shall determine, for each river basin, using appropriate methods according to its specificity, the flow regime required to ensure good water status, its present and foreseeable uses, and the compliance with the legal regime of the Agreements of 1964 and 1968.
2. The flow regime, for each river basin, shall be proposed by the Commission and approved by the Conference.
3. Each Party shall ensure, in its territory, the management of the hydraulic infrastructures so as to guarantee the compliance with the established flow regime.
4. Any abstraction of water, regardless of its use and geographical destination, shall comply with the flow regime and with any other provisions set out in the present Convention.

Other examples: Buzi Agreement, 2019, Art. 19 and Annex 2; 2008 Niger Basin Water Charter, Annex 2; 1979 Tri-Partite Agreement (Argentina, Brazil, Paraguay), Art. 5.

Supporting resources (*non-exhaustive*)

- UNECE, *Draft handbook on water allocation in a transboundary context*, 2021, https://unece.org/sites/default/files/2021-04/INF5_Draft%20Handbook%20on%20Water%20Allocation%20in%20a%20Transboundary%20Context.pdf.
- UNECE, *Identifying, assessing and communicating the benefits of transboundary water cooperation. Lessons learned and recommendations*, 2018.
- International Network of Basin Organisations, *The handbook for integrated water resources management in transboundary basins of rivers, lakes and aquifers,* 2012, https://www.inbo-news.org/IMG/pdf/MGIREB-UK-2012-2.pdf.

Module 3 – Substantive content of the agreement or other arrangement

Building block: Water management and protection issues

Key aspect: Hydraulic facilities and infrastructures

States may have built hydraulic facilities and infrastructures for various existing and planned water uses. While all States within a basin may benefit from these facilities and infrastructures, there may be risks downstream or their construction may prejudice upstream uses. The idea of various States "sharing" the same basin not only refers to the water resources but, given the links between water-food-energy-ecosystems, sharing might also relate to derived intersectoral uses and benefits. Sharing these benefits may bring advantages to the States sharing a particular basin, including their ability to attract project financing.[66]

Some States sharing transboundary waters jointly own large dams. In such a case, two or more States sharing transboundary waters can decide, by a legal arrangement, that the dam is their joint and indivisible property. Sometimes, two States might build a dam on their shared border, which inevitably requires them to cooperate. When a major project is located in the most upstream or downstream State of a transboundary basin, it can also become a stumbling block for the countries, as future projects in States further upstream or downstream can jeopardize, or be contingent on, the water supplies from other States. In such situations it becomes important that there is a clear benefit-sharing regime to regulate and govern the uses of the transboundary waters at a basin scale.

Box 17: Joint works in the Senegal Basin

Joint works in the Senegal Basin

In addition to the Conventions on the creation of the OMVS and on the legal status of the Senegal River, the Heads of State and Government of Mali, Mauritania and Senegal, which were later joined by Guinea, signed a Convention on the Legal Status of Common Works in 1978 by the Convention on the Financing of Common Works, signed on 12 May 1982 in Bamako.

This led to the building of the Diama and Manantali Dams in 1988 and 1990 respectively, and later complemented by the Félou and Gouina run-of-river hydroelectric projects. Management and operation companies shared by the four States are responsible for their operation and maintenance.

Faidherbe bridge on Senegal River, Saint Louis, Senegal

[66] *Policy guidance note on the benefits of transboundary water cooperation,* no. 11.

Points to consider when drafting a provision on hydraulic facilities and infrastructure

- **States sharing transboundary waters may decide to include a provision on the development of a joint hydraulic infrastructure.**
- **The decision to implement a joint facility on** a transboundary watercourse may be a sensitive issue of cooperation between States. Obtaining consensus on a joint project is a major milestone in any international cooperation and political-economic integration. Joint hydraulic infrastructure may provide significant economic and social benefits, in particular when it comes to energy and irrigated agriculture. The development of a joint infrastructure may prevent the risks of negative impacts on downstream States, caused by withdrawals and changes to the flow system. Joint infrastructure may contribute to preventing tensions between States sharing transboundary waters, and may become a major factor of integration when designed and managed consensually. While providing for the possibility of a joint project in an arrangement, the details of such an arrangement may be set out in future Annexes or protocols.
- **States may consider including provisions related to the security of water infrastructure.**

Large projects should respect security standards, including the enforcement of international rules on dam safety and security, as well monitoring mechanisms and the harmonization of practices. It is important to develop contingency plans to prevent the risks of a dam break. Emergency preparedness plans should be key features of such projects. Reference to the principles and rules of international humanitarian law (which also applies to international and non-international armed conflicts) may contribute to the objective of ensuring the security of dams.[67] In terms of security, States can consider including provisions for the protection of shared resources and infrastructure in times of armed conflict, thereby respecting international law in accordance with the 1992 Rio Declaration (Principle 24).

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 18: Revised Protocol on Shared Watercourses in the Southern Africa Development Community, 2000

Protection of water installations

Revised Protocol on Shared Watercourses in the Southern Africa Development Community, 2000

Article 4: Specific provisions

3) c) iii) Shared watercourses and related installations, facilities and other works shall enjoy the protection accorded by the principles and rules of international law applicable in in international and non-international armed conflict and shall not be used in violation of those principles and rules.

Other examples: OMVS Convention on the Legal Status of Common Works, 1978; Dniester Treaty, 2012, Art. 10; Treaty on the Lesotho Highlands Project, 1986.

Supporting resources (*non-exhaustive*)

- Water Convention, Note by the Secretariat, *Nexus solutions and investements in transboundary baisns: draft report – the scope, approach and the analytical framework,* 2020, https://unece.org/fileadmin/DAM/env/documents/2020/WATER/09Sep30-2Oct_15th_IWRM/INF.4_ENG_Nexus_Solutions_Investments_final.pdf
- Global High-Level Panel on Water and Peace, *A Matter of Survival*, 2017.
- Geneva Water Hub, *The Geneva List of Principles on the Protection of Water Infrastructure*, 2020, https://www.genevawaterhub.org/sites/default/files/atoms/files/gva_list_of_principles_protection_water_infra_www.pdf .

[67] See Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 1977 (Arts. 54 and 56), and the Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of Non-International Armed Conflicts (Protocol II), 1977 (Arts. 14 and 15).

Module 3 - Substantive content of the agreement or other arrangement

Building block: Water management and protection issues

Key aspect: Prevention, reduction and control of pollution

Water pollution, both regular and accidental,[68] is happening in many transboundary basins, and is significantly impacting water resources, aquatic ecosystems, as well as water supplies for human needs and economic sectors. Water pollution increases competition for available water resources amongst various needs.

Both the 1992 Water Convention and the 1997 Watercourses Convention explicitly mention the obligation to take all appropriate measures to prevent, control and reduce pollution of waters causing or likely to cause transboundary impact.[69] Measures against water pollution include: setting up water quality objectives and criteria; prior licensing of wastewater discharges; monitoring and control of the authorized discharges; application of best available technology in the permitting process; implementing best environmental practices for the reduction of pollution from diffuse sources; application of environmental impact assessment and other means of assessment; and, taking specific measures to prevent the pollution of groundwaters.

The prevention, reduction and control of water pollution is an important topic of cooperation in many basins. Furthermore, these issues are often at the heart of public interest and involvement in transboundary water cooperation.

Points to consider when including a provision on the prevention, reduction and control of water pollution

- **The inclusion of provisions on the prevention, reduction and control of water pollution may complement other procedural requirements.**

States sharing transboundary waters may operationalize provisions on water pollution through the undertaking of joint monitoring and assessment[70] of the status of transboundary waters, by setting joint water quality objectives and criteria, and implementing dedicated programmes to reduce point and diffuse pollution.

- **Both the principle of equitable and reasonable utilization and the duty to take all appropriate measures to prevent significant harm address transboundary pollution.**

Transboundary pollution is often at the heart of concerns between States related to the equitable and reasonable utilization of transboundary waters, and therefore a key factor when determining what is equitable and reasonable. Along similar lines, the due diligence obligation to take all "appropriate measures" to prevent significant harm will often relate to transboundary pollution. More specific provisions related to pollution can therefore supplement and support the general substantive principles of equitable and reasonable utilization, the duty to take all appropriate measure to prevent significant harm and the general obligation to cooperate.

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68 See key aspect: Emergency or critical situations, including floods and droughts, pp. 44-47.

69 Article 2(2) (a) of the 1992 Water Convention; Article 21(2) of the 1997 Watercourses Convention.

70 See building block: Joint monitoring and assessment, pp. 79-80.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 19: Protocol for Sustainable Development of Lake Victoria Basin, 2003

Protocol for Sustainable Development of Lake Victoria Basin, 2003 ("Lake Victoria Protocol, 2003")

Article 19

Preventing pollution at source

1. The Partner State Shall:
   a) Require developers of planned activities to put in place measures which prevent pollution, and where prevention is not possible, minimize pollution.
   b) Put in place measures that conduce operators of existing facilities to avoid, reduce, minimize and control pollution from such facilities.
   c) To develop sustainable mining and mineral and processing methods.
2. The Partner States shall adopt those measures to economic realities of the Basin, including the ability of the owners of regulated entities to afford remedial measures provided that those realities are compatible with the long-term need of sustainable development.
3. Partner States shall adopt measures to reduce municipal waste input into the Lake.

Article 20

Prevention of pollution from non-point sources

The Partner States shall take all appropriate legal, economic realities of the Basin, including the ability of the owners of the regulated entities to afford remedial measures provided that those realities are compatible with the long-term need of sustainable development.

a) Sustainable forestry practices, agro-foresty, afforestation, reforestation and good pasture husbandry;
b) Appropriate agricultural land use methods, soil conservation, control and minimization of the use of agricultural chemical inputs;
c) General land use planning and enforcement of urban planning laws;
d) Sanitation and hygiene in the Basin. [. . .].

Other examples: Agreement between the Government of the Russian Federation and the Government of the Republic of Kazakhstan on the Conservation of the Ecosystem of the Transboundary Ural River Basin, 2016, Art. 3; and the Framework Agreement between the Government of Montenegro and the Council of Ministers of the Republic of Albania on mutual relations in the field of management of transboundary water, 2018.

Supporting resources (*non-exhaustive*)

- UNECE, *Joint Expert Group on Water and Industrial Accidents*, 2019.
- UNECE, *Safety guidelines and good practices for the management and retention of firefighting water*, 2019, https://unece.org/environment-policy/publications/safety-guidelines-and-good-practices-management-and-retention.
- UNECE, *Checklist for contingency planning for accidents affecting transboundary waters*, 2016, https://unece.org/environment-policy/publications/checklist-contingency-planning-accidents-affecting-transboundary
- UNECE, *Safety guidelines and good industry practices for oil terminals*, 2015, https://unece.org/environment-policy/publications/safety-guidelines-and-good-industry-practices-oil-terminals.
- UNECE, *Safety guidelines and good practices for pipelines*, 2015, https://unece.org/environment-policy/publications/safety-guidelines-and-good-practices-pipelines-0.

Module 3 - Substantive content of the agreement or other arrangement

Building block: Water management and protection issues

Key aspect: Emergency or critical situations, including floods and droughts

Building on the traditional cooperation in joint flood or drought risk management or cooperation over specific hazardous facilities and activities, States are gradually moving towards cooperation on disaster risk reduction in transboundary basins, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030.[71] The term "emergency" or "critical situations" refers to all situations that may have a transboundary impact, irrespective of their origins, whether due to natural phenomena, e.g., floods, droughts, ice drifts, storms, other extreme weather conditions, and earthquakes, or human conduct such as industrial and other accidents, man-made floods, and sabotage against installations. Even small amounts of hazardous substances released into waters can cause significant environmental damage with far-reaching and long-term effects.[72]

The term emergency or critical situations includes situations caused by sudden events or by the cumulative effect of circumstances extending over a period of time, which at some point pose a threat of causing transboundary impact.[73] Emergency or critical situations often trigger bilateral and basin-wide cooperation on transboundary waters or give an impetus to strengthening such cooperation.

With regard to minimizing the risk of emergency or critical situations, whether natural or as a result of human conduct, obligations that can be provided for within an arrangement include the development of joint contingency plans, the requirement to notify without delay and, where appropriate, to provide assistance, a commitment to construct or co-ordinate flood protection infrastructures, and to establish or coordinate flood preparedness measures.

Box 20: Emergency or critical situations within the global Water Conventions

Emergency or critical situations within the global Water Conventions

The following obligations of States sharing transboundary waters may be derived from the two global Water Conventions:

- Obligation to take all appropriate measures to prevent emergency or critical situations from arising (the 1992 Water Convention (Arts 2(1), and Art. 3(1) (j) and (l) and the 1997 Watercourses Convention (Art. 27));
- Obligation to develop contingency planning (the 1992 Water Convention (Art. 3(1)(j) and the 1997 Watercourses Convention (Art. 28(4));
- Obligation to notify without delay of any emergency or critical situation (the 1992 Water Convention (Art. 14) and the 1997 Watercourses Convention (Art. 28(2));
- Obligation to take all appropriate measures to reduce transboundary impact upon occurrence of emergency or critical situation (1992 Water Convention (Art. 2(1) and 1997 Watercourses Convention, Art. 28(3)).

In addition, the 1992 Water Convention requires States sharing transboundary waters to set up coordinated or joint warning and alarm systems with the aim of transmitting information on the emergency or critical situations (Art. 14). It also requires Riparian Parties to provide mutual assistance in critical situations upon request and agree in advance upon the procedures for mutual assistance (Art. 15).

Both instruments emphasize the role of joint institutions created by States sharing transboundary waters, which Parties entrust to establish warning and alarm procedures (1992 Water Convention, Art. 9(2)) or can assist in developing contingency plans (1997 Watercourses Convention, Art. 28(4)). Through its work on climate change adaptation and disaster risk reduction the 1992 Water Convention also supports countries in preparing for and as much as possible preventing such emergency situations, in particular floods and droughts.

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71 UN, *Sendai Framework for Disaster Risk Reduction 2015-2040*, 2015, https://digitallibrary.un.org/record/243256?ln=en.

72 UNECE, *Joint Expert Group on Water and Industrial Accidents: Addressing the risk of accidental transboundary water pollution*, 2019, https://www.informea.org/sites/default/files/imported-documents/1908981_E_ECE_CP.TEIA_NONE_2019_1_ECE_MP.WAT_NONE_2019_1_WEB.pdf.

73 UNECE, *Guide to Implementing the Water Convention*, no. 3, paras. 207 and 299-300.

Nuclear power plant on Meuse River at Chooz, Ardennes, France near the border with Belgium

Points to consider when drafting a provision on emergency or critical situations within arrangements on transboundary waters

- **Provisions on the prevention of accidental pollution of transboundary waters increase preparedness and contribute to effective response and recovery**

Rules on industrial accidents allow States sharing transboundary waters to enhance their preparedness for accidental water pollution by taking collective measures, for example, to identify hazardous industrial facilities within the basin. States may also set up and operate coordinated warning and alarm systems as well as organize international response exercises that simulate industrial accidents or shipping accidents along transboundary waters. An example of the latter is the joint exercise by the International Commission for the Protection of the Oder in 2017.[74] States may also agree in advance upon procedures for mutual assistance. Such measures not only increase preparedness, save lives and minimize the costs of recovery from accidental pollution, but they also enhance trust among States sharing transboundary waters.

- **Emergency or critical situations may result in serious consequences for States sharing transboundary waters.**

Emergency or critical situations may result in loss of life or injury, property damage, social and economic disruption or environmental degradation. By cooperating to reduce the risk factors and develop contingency planning, and by taking other structural and non-structural measures, States sharing transboundary waters may prevent and mitigate emergency or critical situations. These joint actions can save lives and prevent or reduce economic and environmental damage. Basin-wide cooperation in climate change adaptation and disaster risk reduction can also avoid maladaptation and lead to increased effectiveness by sharing data, ensuring early warning of potential harm, locating measures where they have the optimum effect and potentially even sharing costs between States sharing transboundary waters.[75]

- **Emergency or critical situations may intensify with the growing impacts of climate change.**

Building resilience becomes a major issue as climate change affects water quantity and quality, water temperature, water-related ecosystems and the magnitude and occurrence of extreme weather events, such as floods and droughts. Many transboundary basins are particularly vulnerable to these changes. Resilient and adaptive legal frameworks for transboundary water cooperation can provide a means by which to respond to the growing impacts of climate change, including the rising number and intensity of extreme weather events.

- **Prevention, preparedness, response and restoration or remediation require engagement of many authorities beyond the water management sector.**

Depending on the situation, cooperation over emergency or critical situations may require the involvement of a large number of governmental authorities, including ministries of climate change and disaster risk direction, interior, energy, agriculture, transport, finance, emergency authorities, fire brigades, inspectorates and police. Inclusion of provisions on emergency or critical situations in arrangements on transboundary waters can be helpful to secure the engagement of these various actors at the basin level. Many States have bilateral treaties that set out general requirements, i.e., not only within the water context, on how they assist each other in case of critical or emergency situations.

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[74] International Commission for the Protection of the Odra River against Pollution, http://mkoo.pl/index.php?mid=6&aid=805&lang=DE.

[75] See also building block: Financing, pp. 90-91.

How could provisions be framed? Examples from treaty practice *(non-exhaustive)*

Box 21: Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on the rational use and protection of transboundary waters, 2008

Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on the rational use and protection of transboundary waters, 2008

Article 4. Implementation mechanisms

[. . .]

3. Main tasks of the Joint Commission include:

4) Studying the methods of analysis and assessment of significant transboundary impact arising from an emergency situation, and on this basis, the development of measures to provide assistance to the State affected by transboundary impact;

5) Development of prevention, response and mitigation plans for emergency situations at transboundary waters; [. . .]

Article 6. Emergency situations

1. Parties shall establish the systems of warning and exchange of necessary information for the prevention of emergency situations on transboundary waters and ensure their effective functioning.

2. In the event of an emergency situation, the Parties shall immediately notify each other and exchange relevant information, as well as take the required reasonable measures to eliminate or mitigate the consequences of an emergency situation on the basis of this Agreement and the Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on cooperation in the prevention of and response to emergency situations dated 21 March 2006.

Other examples: Albufeira Convention, 1998, Art. 18; and Buzi Agreement, 2019, Art. 18.

Supporting resources (*non-exhaustive*)

- UNECE, *Model Provisions on Transboundary Flood Management*, 2006, http://staging2.unece.org.net4all.ch/fileadmin/DAM/env/documents/2006/wat/ece.mp.wat.19_ADD_1_E.pdf.
- UNECE, *Transboundary Flood Risk Management: Experiences from the UNECE region*, 2009, https://unece.org/environment-policy/publications/transboundary-flood-risk-management-experiences-unece-region.
- UNECE, *Guidance on Water and Adaptation to Climate Change*, 2009, https://unece.org/fileadmin/DAM/env/water/publications/documents/Guidance_water_climate.pdf.
- UNECE, *Water and Climate Change Adaptation in Transboundary Basins: Lessons Learned and Good Practices*, 2015, https://unece.org/environment-policy/publications/water-and-climate-change-adaptation-transboundary-basins-lessons.
- UNDR and UNECE, *Words into Action Guidelines: Implementation guide for addressing water-related disasters and transboundary cooperation*, 2018, https://unece.org/sites/default/files/2021-07/ECE_MP.WAT_56_E_web_FINAL.pdf.

Module 3 – Substantive content of the agreement or other type of arrangement

Building block: Water management and protection issues

Key aspect: Drafting water/basin/aquifer management plans

States should establish a transboundary strategy for the long-term management of transboundary waters, based on shared priorities and objectives. A joint body should perform the task of developing the management plan for a particular basin or aquifer. The development process leading to the adoption of a management plan may also study various planning scenarios before States choose and implement a consensual scenario. The plan may also consider costs and benefit-sharing among the States sharing transboundary waters, and account for other regional and sectoral planning process, particularly water-food-energy-ecosystem linkages.

Planning activities on a transboundary basin may take on many forms and titles and include both long and short-term components. Identifying stakeholders, conducting institutional capacity studies, assessing governance structures, and securing investment are essential parts of the process. The adoption of the water/basin/aquifer resources management plan at a national level, can also strengthen the implementation of a basin-wide plan.

One of the criteria for determining if an arrangement is "operational" pursuant to SDG indicator 6.5.2 is the existence of joint or co-ordinated management plan(s), or joint objectives.

Points to consider when drafting a provision on management plans

- **Basin and aquifer management plans should include transboundary diagnostics.**

The first step for a water/basin/aquifer resources management plan is to carry out a situational analysis and identify the current state of water resources and uses, challenges, and opportunities, for example, through an initial transboundary diagnostic involving States sharing transboundary waters.[76] A situational analysis focuses not only on the quantity and quality of water resources and ecosystems, but also on the socio-economic activities and areas with a direct or indirect impact, whether immediate or future, on water resources, such as soil use, demographic data, etc.

The diagnostic provides a foundation which makes it possible to draft the plan, and is part of a process of involving stakeholders, from the initial stages through the implementation of solutions. The basin scale should reflect a coherent set of national priorities: once this phase is completed, reaching a consensus between States is possible. Such a consensus will be an important foundation for developing an arrangement on transboundary waters.

- **States sharing transboundary waters should consider drafting a transboundary roadmap.**

Once the diagnostic is completed, States sharing transboundary waters should identify activities to be carried out. In addition to institutional projects or capacity building, there is a need to identify the activities most likely to promote the integration of several States, such as hydroelectric production, irrigation, navigation, preserving ecosystems, fighting against natural disasters and combating pollution.

States sharing transboundary waters can then agree on the sharing the costs and benefits of these activities, based on the results of economic simulations and in line with a cooperation and negotiation

[76] For example, through GEF methodology for Transboundary Diagnostic Analysis - GEF, TDA/SAP Methodology, https://iwlearn.net/manuals/tda-sap-methodology.

process. In addition to the shared benefits of various developments and facilities, States should study the benefits and impacts on ecosystems of their activities.

These activities, as well as the sharing of the costs and benefits, may be outlined within an arrangement.

- **States sharing transboundary waters should develop, and regularly review and update, a common river basin management plan.**

The river basin management plan is a unique document drafted at the transboundary basin level, and national plans for the portions of the basins must be coherent with it. Its budget should be drafted realistically and adapted to the type of activity programme and investments divided as equitably as possible among the States sharing transboundary waters. The basin organization drafts the strategy and financing methods, which may vary based on the type of activities. Cost-sharing among States reflects the sharing of benefits from the activities to be carried out.

The implementation process is iterative, and the States concerned should review the transboundary plan within a few years for the implementation of the next programme, which may involve integrating new data and considering new results and predictable changes on the horizon.

The process by which these plans are developed and reviewed might be set out within the arrangement itself.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 22: Lake Victoria Protocol, 2003

Lake Victoria Protocol, 2003

Article 27: Management Plans

1. Each Partner State shall:
   a) develop national strategies, plans or programmes for conservation and sustainable use of the resources of the Basin or adapt for this purpose existing strategies, plans or programmes which shall reflect, inter alia, the measures set out in this Protocol; including the development of infrastructure, commerce and trade, tourism, research and development; and
   b) integrate, as far as possible and as appropriate, the conservation and sustainable use of the resources of the Basin into relevant sectoral or cross-sectoral plans, programmes and policies.
2. The Commission shall develop a management plan for the conservation and the sustainable utilization of the resources of the Basin. The management plan shall be harmonised with National Plans developed under paragraph 1 of this Article and approved by the Council.

Other examples: Dniester Treaty, 2012, Arts. 6 and 27; and Sava Agreement, 2002, Art. 12.

Supporting resources (*non-exhaustive*)

- International Network of Basin Organisations, *The handbook for integrated water resources management in transboundary basins of rivers, lakes and aquifers,* 2012.
- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp. 191-195.
- GEF, TDA/SAP Methodology, https://iwlearn.net/manuals/tda-sap-methodology.

Module 3 - Substantive content of the agreement or other arrangement

Building block: Water management and protection issues

Key aspect: Groundwater

Groundwaters which mark, cross or are located on boundaries between two or more States, whether related or unrelated with surface waters, as well as groundwaters located exclusively within the territory of one State but interacting with transboundary rivers or international lakes, e.g., surface waters located in the discharge zone of the said groundwaters, are subject to transboundary cooperation on the basis of the general principles of international water law. The relevant agreements or arrangements should encompass not only the groundwater body but also, following the catchment area approach which applies to surface waters and groundwaters alike, the geological formation allowing the flow of groundwater, as part of the recharge area of the latter.

Box 23: 2008 ILC Draft Articles on the Law of Transboundary Aquifers and 2012 Model Provisions on Groundwater

The International Law Commission provides, in its 2008 Draft Articles on the Law of Transboundary Aquifers, a consolidation of the general principles of international water law applicable to groundwater, such as the equitable and reasonable utilization principle, the no-harm rule and the obligation to cooperate. Building on this instrument, the Meeting of the Parties to the 1992 Water Convention adopted, in 2012, the Model Provisions on Groundwater, to assist States willing either to conclude a Protocol additional to an existing water agreement lacking specific reference to groundwater, or to include provisions addressing groundwater and transboundary cooperation thereto in the main body of agreements or arrangements on transboundary waters.

Freshwater spring in Pampas, in Argentina

The increasing awareness of the prospects of water scarcity in relation to the growing demands for clean water worldwide has focused attention on groundwater. More recent arrangements on transboundary waters contain provisions on groundwater, although few arrangements are specifically dedicated to a given groundwater body.[77] Arrangements on transboundary waters that refer to groundwater often provide that their scope of application includes groundwaters interacting with surface waters,[78] or flowing with them into a common terminus, such as the sea or a lake.[79] Some arrangements refer specifically to the prevention of pollution of groundwater,[80] while others contain provisions on specific issues such as the integrated management of surface and groundwater resources,[81] or the enumeration of groundwater resources and of relevant protection zones.[82]

Points to consider when drafting a provision on groundwater

- **States sharing transboundary waters should include regulatory guidance on groundwater because of its vulnerability.**

Groundwater is generally characterized by more relative purity than surface water due to the capacity of many subsoil profiles in recharge areas to mitigate the impact of water pollutants. Such characteristics may render groundwater more vulnerable with respect to overexploitation, and therefore, to depletion. Additionally, pollution may be more serious a problem with groundwater than surface water since contamination may reside in groundwater for longer. In this context, drafters of arrangements must account for the interactions between surface and groundwater since the pollution of groundwater may also derive from releases into surface water.

While the conclusion of an additional protocol on groundwater to an arrangement on transboundary waters is an option, more often Parties include provisions on groundwater in arrangements dealing with transboundary river basins. Such arrangements should at a minimum contain a provision making clear that their scope of application covers groundwater hydrologically related to surface waters.[83] It is then up to the Parties to such an arrangement to explicitly address specific issues related to groundwater according to their needs and the particular characteristics of each case. In addition, States may task their joint bodies with groundwater issues through, for example, the creation of a dedicated groundwater working group. The SDG indicator 6.5.2 also requires States to cooperate on shared groundwaters.

- **States sharing transboundary waters should consider the specificities of groundwater use.**

Given that groundwater is less renewable than surface water or sometimes even non-renewable, the sustainable and equitable use thereof should take into account the imperatives of conservation, environmental protection and future availability of groundwater, and not just consider the optimal utilization of the waters. States should thus aim to strike a balance between abstraction and replenishment of groundwaters or at least, in case of non-recharging at all groundwater bodies, to maintain groundwater resources at the maximum extent reasonably possible.

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77 Such as the Guarani Aquifer Agreement, 2010.

78 See the Rhine Convention, 1999, Art. 2.

79 See the Tripartite Interim Agreement for Co-operation on the Protection and Sustainable Utilization of the Water Resources of the Incomati and Maputo Watercourses, 2002 ("Inco-Maputo Agreement, 2002"), Art. 1, as well as Lake Tanganyika Convention, 2003, Art. 1.

80 See the Inco-Maputo Agreement, 2002, Art. 4.

81 Such as the Sava Agreement, 2002, Art. 11.

82 See the Danube Convention, 1994, Art. 6.

83 See building block: Scope, pp. 17-18.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 24: Sava Agreement, 2002

Sava Agreement, 2002

Article 1: Definitions

2. The Sava River Basin (...) comprises surface and ground water, flowing into a common terminus.
[. . .]

Article 11: Sustainable water management

The Parties agree to cooperate in management of the waters of the Sava River Basin, in a sustainable manner which includes integrated management of surface and groundwater resources (...).

Other examples: Water Charter of the Lake Chad Basin, 2012, Art.10; Buzi Agreement, 2019, Arts. 4 and 5.

Supporting resources (*non-exhaustive*)

- UNECE, *Guidelines on Monitoring and Assessment of Transboundary Groundwaters*, 2000.
- UNECE, *Model Provisions on Transboundary Groundwaters*, 2014.
- UNESCO-IHP & IGRAC, *Global Groundwater Framework for Action to achieve the vision on groundwater governance*, 2015, https://www.un-igrac.org/sites/default/files/resources/files/GWG_FRAMEWORK.pdf.
- Raya Stephan (ed.), *Transboundary Aquifers: Managing a vital resource – The UNILC Draft Articles on the Law of Transboundary Aquifers* (UNESCO, 2009), https://www.ilsa.org/Jessup/Jessup17/Batch%202/UNESCO.pdf.
- Gabriel Eckstein, *The International Law of Transboundary Groundwater Resources* (Routledge, 2017).
- Francesco Sindico, *International Law and Transboundary Aquifers* (Edward Elgar, 2020).

Flamingoes in Bolivia, on lake Laguna Colorada near the border with Chile

Module 3 – Substantive content of the agreement or other arrangement

Building block: Water management and protection issues

Key aspect: Protection of marine environment

Marine and coastal resources are important assets for sustainable development. They are also connected to rivers, lakes and groundwater, which means that activities within a river basin may directly impact marine and coastal ecosystems. This system of interconnecting components is referred to as the source-to-sea system, which is defined as the "biophysical continuum of the land area that is drained by a river system, its lakes and tributaries (the river basin), connected aquifers and downstream recipients including deltas and estuaries, coastlines and nearshore waters, the adjoining sea and continental shelf as well as the open ocean".[84]

Transboundary river basins can play a significant role in the protection of the marine environment. For example, approximately eight million tons of plastic enter the ocean every year from land-based sources via transboundary river basins.[85] It is also important to recognize the impact of the marine environment on freshwater, as the degradation of the marine environment could potentially affect freshwater resources, such as fish migration.

Reducing impacts from freshwater to the marine ecosystem requires States to include provisions on the protection of marine environment within arrangements for transboundary waters.

Points to consider when drafting a provision on the protection of the marine environment

- **Referring to specific keys flows to ensure a proper consideration of marine protection issues.**

Arrangements might include provisions referring to specific key flows, including water flow, sediment flow, biota flow, pollutant flow, materials flow and ecosystem services. Setting an environmental flow of the freshwater to ensure sustainable marine environment is another way to manage the impact of freshwater uses on the marine environment. See for example the collaboration between the Orange-Senqu River Commission and the Bay of Benguela Commission.[86]

- **States sharing transboundary waters may consider two models on how provisions on marine environment could be framed.**

One model may be a protocol signed by States sharing a common sea or ocean, specifically addressing minimization of pollution and impacts from land-based sources. Examples of such agreements include the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities, 1980 (see box 25), and the Protocol concerning Pollution from Land-Based Sources and Activities under the Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region, 1983.

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84 Mathews, R. E., Tengberg, A., Sjödin, J., and Liss-Lymer, B., *Implementing the source-to-sea approach: a guide for practitioners* 2019, https://www.siwi.org/publications/implementing-the-source-to-sea-approach-a-guide-for-practitioners.

85 SIWI, *Transboundary waters: cooperation from source to sea*, *Policy Brief,* 2018, https://www.siwi.org/wp-content/uploads/2018/10/PB-Transboundary-water-cooperation-from-source-to-sea-WEB.pdf.

86 See ORASECOM, *From Source to Sea: Interactions between the Orange–Senqu River Basin and the Benguela Current Large Marine Ecosystem,* 2013, https://iwlearn.net/resolveuid/7973e138737a4b249430809efcb86cf2.

Box 25: Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities, 1980

Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities, 1980

This is one of the protocols under the Convention for the Protection of the Mediterranean Sea Against Pollution. The protocol requires countries to develop national and regional action plans that contain measures and timetables on minimizing pollution from various land-based activities. It also requires countries to collaborate on monitoring of pollutants and scientific and technical research cooperation regarding pollutants. Article 11 of the protocol specifically requires the Party which is the riparian of a transboundary river flowing into the Mediterranean Sea, to cooperate with upstream riparian States on pollution reduction, even when the upstream riparian States are not a party to the protocol.

Cetina river discharging into Mediterranean Sea at Omis, Croatia

Another model is the adoption of an agreement between joint bodies and marine commissions. An example is the MoU between the International Commission for the Protection of the Black Sea (ICPBS) and the International Commission for the Protection of the Danube River (ICPDR) for a common strategic goal to protect the Black Sea environment.[87] Engaging marine actors with river basin organizations would be an effective way to ensure linkages and coordination. Parties could achieve this through joint activities such as monitoring, or have marine actors as observers to meetings of the river basin organizations.

More generally, Parties might make reference to the importance of accounting for the marine environment in their arrangements for transboundary waters. The 1992 Water Convention, for instance, refers to the need for, "the protection of the environment of transboundary waters or the environment influenced by such waters, including the marine environment" (Art. 2 (6)), and obliges joint bodies established for those transboundary waters to invite any joint bodies established for the relevant marine environment to cooperate, (Art 9 (4)).

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 26: Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based sources, 1980

Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based sources, 1980

Article 11

If discharges from a watercourse which flows through the territories of two or more Parties or forms a boundary between them are likely to cause pollution of the marine environment of the Protocol area, the Parties in question, respecting the provisions of this Protocol in so far as each of them is concerned, are called upon to co-operate with a view to ensuring its full application.

Other examples: Treaty between Uruguay and Argentina concerning the Rio de la Plata and the Corresponding Maritime Boundary, 1973, Art. 80; and MoU between the International Commission for the Protection of the Black Sea (ICPBS) and the International Commission for the Protection of the Danube River (ICPDR) for a common strategic goal to protect the Black Sea environment

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp. 185-188.
- Stockholm International Water Institute (SIWI), *Transboundary waters: cooperation from source to sea*, SIWI Policy brief, 2018.
- Mathews, R. E., Tengberg, A., Sjödin, J., and Liss-Lymer, B., *Implementing the source-to-sea approach: A guide for practitioners* (SIWI, 2019).

[87] *Memorandum of Understanding between the International Commission for the Protection of the Black Sea (ICPBS) and the International Commission for the Protection of the Danube River (ICPDR) on common strategic goals*, 2001, http://www.icpdr.org/main/resources/mou-between-icpbs-and-icpdr.

Dniester Canyon in the Ternopil Oblast of Ukraine

Module 3 - Substantive content of the agreement or other arrangement

Building block: Sectoral and intersectoral issues

Key aspect: Agriculture

The conditions of transboundary waters are highly dependent on other sectoral activities practiced within catchment areas. Agriculture, including irrigation, is one of the most important water-related and dependent economic sectors using large amounts of water to supply a growing population with food and food-products. Water and agricultural policies should be designed and harmonized in a way that implementation of measures to protect water bodies do not cause income losses for farmers. Both sectors have to consider a win-win solution with equal benefits.

Weather conditions, droughts, climate change might cause economic losses the farmers, which can be balanced by sufficient quantity and quality of water for its production. Approximately 70 per cent of the freshwater use is consumed by agriculture for irrigation and nutrient and chemicals diffuse pollution also mainly originated from that sector. Therefore, agriculture may cause deterioration of water resources by over-abstraction and pollution. Finding the way towards win-win strategies is both beneficial for the farmers through sustainable use of fertilizers and plant-protecting chemicals – reducing losses and costs – and also for the water environment through reducing impacts on water resources.

Points to consider when drafting provisions related to agriculture and water

- **States sharing transboundary waters may consider including provisions on water and agriculture amongst the tasks of their joint bodies.**

Joint bodies can help to design these policies in a harmonized way. For example, the ICPDR has taken a lead in starting intersectoral negotiations on the Danube basin, that include agriculture (see Box 27).

However, it is important that the implementation of measures to protect water bodies does not disproportionally threaten the livelihoods of farmers – although nutrient pressure from agricultural diffuse sources could increase and affect the status of transboundary surface waters, groundwater and finally the marine environment. Climate change forecasts include an increased number of drought events, and extreme weather conditions could trigger serious water scarcity issues, which may have a transboundary dimension for agriculture. Good status of all water bodies is one of the basic conditions for sustainable practices in agriculture.

- **When drafting agreements or other arrangements on transboundary waters, States should take into account the implications for agriculture.**

Agriculture may cause deterioration of transboundary water resources by over-abstraction and pollution. This may justify the inclusion of agriculture-related measures within arrangements on transboundary waters. For instance, a commitment to adopt agro-environmental policies at the domestic level can improve the status of both national and transboundary water bodies. Similarly, a requirement to implement "good environmental agriculture practice" at the farm level and ensure that environmental measures have to be applied (natural water retention, erosion mitigation, reduction of use of chemicals and fertilizers), can help ensure good quality of water resources.

How could the intersectoral cooperation be successful on a transboundary basin? Examples from treaty practice (*non-exhaustive*)

Box 27: Guidance Document on Sustainable Agriculture in the Danube River Basin

Guidance on Sustainable Agriculture in the Danube River Basin

Agriculture is a major source of income for many people living in the Danube River Basin, but also a major source of pollutants, including fertilizers and pesticides. The ICPDR, as the coordinating body for transboundary water management in the Danube River Basin, initiated a dialogue with the agriculture sector with a view to developing guidance on sustainable agriculture. The primary focus of the guidance has been on sustainable nutrient management, although Danube countries have recently highlighted climate change effects, including water scarcity and drought, as a significant water management issue within the Basin. The scope of the guidance document has therefore been extended to address drought issues, as well as nutrient management.

See ICPDR, *Recommendations: BAT for Agriculture*, _http://www.icpdr.org/main/resources/recommendations-bat-agriculture .

Danube Canyon (Iron Gates Gorge) at the border between Serbia and Romania

Supporting resources (*non-exhaustive*)

- UNECE, *Methodology for assessing the water-food-energy-ecosystem nexus in transboundary basins and experiences from its application: synthesis*, 2018, https://unece.org/environment-policy/publications/methodology-assessing-water-food-energy-ecosystems-nexus .
- De Strasser, L., *et al,* "A methodology to access the water energy food ecosystems nexus in transboundary river basins", *Water*, vol. 8(2), 2016.
- Gwynn, M.A "South America and the living principle of reasonable and equitable uses of international watercourses", *2020,* https://watersciencepolicy.com/article/south-america-and-the-living-principle-of-equitable-and-reasonable-uses-of-international-watercourses-6670d6d28a2c?language=English.

Module 3 – Substantive content of the agreement or other arrangement

Building block: Sectoral and intersectoral issues

Key aspect: Energy

The status of transboundary water bodies is highly contingent on other sectoral activities within the catchment areas. Energy, which uses large amounts of water, is one of the most important water-related and dependent economic sectors. Therefore, States should take into account these demands in water allocation and planning. The energy sector is one of the major drivers for developing flow regulation infrastructure or using cooling water from rivers for powerplants. States trade electricity across borders through regional grids. For all these reasons, it is important to consider how the relevant energy sector actors can be involved in water management.

What to consider when drafting provisions related to energy and water

- **States sharing transboundary waters may consider adopting arrangements involving the water and energy sectors.**

Sectoral and national policies on water and energy should become more coherent in order to remove contradictions and reduce inconsistencies and increase synergies when it comes to energy and water resources management, while reconciling multiple uses. Energy production (hydroelectricity, cooling) has an influence on ecosystems linked to water. A flow regulation or regime might be heavily influenced by hydropower generation, although meeting other sectors' and ecosystems' needs also has to be ensured.[88]

The adoption of arrangements between States sharing transboundary waters including energy issues would ensure a better predictability and an adequate legal basis for liability, water uses and compensation measures, for example to reduce impacts of hydropower dams, if appropriate. They may also ensure coordination at the level of, and between, international basin organizations and regional power pools.[89]

In a transboundary context, greater confidence among States sharing transboundary waters is essential in order to reduce political risks for investors in the water and energy sectors. States may use arrangements on transboundary waters to discuss planned developments and evaluate their impacts, as well as to agree on common principles and directions of development. These instruments can thus reduce the risks of potential conflicts.

- **States sharing transboundary waters could consider establishing consultation and coordination mechanisms to ensure better accounting of water for the energy sector's plans.**

River-basin management planning processes may include and provide for communication with energy-sector actors. However, informing the development of energy policies and strategies at an earlier stage can have more impact (e.g., Strategic Environment Assessment (SEA) of a strategy or policy). Early communication and engagement with the energy sector can inform and potentially influence the basin planning at the policy and strategic level.

Moreover, coordination and joint plans in investments can help States sharing transboundary waters to have efficient infrastructure in place that provides for multiple uses and avoids duplication of construction, e.g., building counter-regulator dams when not necessary.

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88 See Key aspect: Water allocation and flow regulation, pp. 37-39.

89 Some examples are the Southern African, West African, or Central African Power Pools. In South America these interconnections can be seen through the Treaty on the Rio de la Plata, 1969, the Treaty between Brazil and Paraguay Concerning the Hydroelectric Utilisation of the Water Resources of the Parana River Owned in Condominium by the Two Countries, the Treaty of Yacyretá, 1973, and the Tri-partite Agreement on the Parana River Projects, 1979.

The water-food-energy-ecosystems nexus approach, as refined under the 1992 Water Convention, provides for the identification of synergistic opportunities between sectors, e.g., energy and water management.[90] Discussing possible transboundary impact of planned energy developments can help to reduce impacts or facilitates reaching an agreement between the States sharing transboundary waters. Guidance can also be developed at the level of a transboundary basin; see for example, *The Guiding Principles: Sustainable Hydropower Development in the Danube River Basin*. ICPDR developed these guiding principles to help find the right balance between economic and environmental needs and an agreement on how to address problems of existing hydropower, and where and how to develop it in the future.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 28: Dniester Treaty, 2012

Dniester Treaty, 2012

In 2012, a Treaty between the Moldova and Ukraine was signed on cooperation in the field of protection and sustainable development of the Dniester River basin. The Dniester Commission, which includes representation from the hydropower sector, is as of April 2021 finalising the operation rules of the Dniester Hydropower Hub to establish schemes for water allocation under different water availability conditions. The Commission also serves as a platform to study disputes arising from the use and protection of water and other natural resources and ecosystems of the basin and seek a settlement.

Other examples of joint investments: Doosti Dam of Iran and Turkmenistan, Itaipu Binacional of Brazil and Paraguay; also, the Russian-Finnish commission includes the power companies on both sides of the border.

Supporting resources (*non-exhaustive*)

- UNECE, *Methodology for assessing the water-food-energy-ecosystems nexus in transboundary basins and experiences from its application: synthesis*, 2018, https://unece.org/sites/default/files/2021-07/ECE-MP-WAT-55_NexusSynthesis_Final-for-Web.pdf.
- INBO, *The handbook for management and restoration of aquatic ecosystems in river and lake basins,* 2015, https://www.inbo-news.org/en/documents/handbook-management-and-restoration-aquatic-ecosystems-river-and-lake-basins.
- UNECE, *Towards sustainable renewable energy investment and deployment: Trade-offs and opportunities with water resources and the environment*, 2020, https://unece.org/environment-policy/publications/towards-sustainable-renewable-energy-investment-and-deployment.
- UN-Water, *The United Nations World Water Development Report 2014: Water and Energy*, 2014, https://www.unwater.org/publications/world-water-development-report-2014-water-energy.

[90] See UNECE, *Methodology for assessing the water-food-energy-ecosystems nexus in transboundary basins and experiences from its application: synthesis*, 2018, https://unece.org/sites/default/files/2021-07/ECE-MP-WAT-55_NexusSynthesis_Final-for-Web.pdf.

Module 3 – Substantive content of the agreement or other arrangement

Building block: Sectoral and intersectoral issues

Key aspect: River navigation

Inland waterway transport has supported the development of robust economies for centuries, while building numerous ties between nations. It is a safe and potentially ecologically viable form of transportation, which is a key part of sustainable economic development. This mode of transporting both goods and people can drive the development of regional economies and bring landlocked States closer to the sea.

Of all modes of transport, inland navigation has the smallest effect on climate change and the least environmental impact. It develops intermodally, along with complementary roadway and rail services, including those that are transboundary. Navigation is low in energy and consumes less fuel per ton of goods than other modes of transport. When road freight is transferred via inland and coastal waterways, traffic jams become less common, even in more urban areas. Planning for transboundary navigation is therefore an important development consideration.

What to consider when drafting provisions related to river navigation?

- **Water resources are often essential components of commercial transport.**

Waters that cross boundaries between States are often essential axes of communication for the international trade of food and other products. Greater knowledge and improved professional capacities in designing, managing and using river navigation show that it is now possible to use and develop inland waterways in a much less environmentally intrusive manner than for other modes of transport.

- **Ensure environmentally friendly navigation.**

Inland navigation can have a significant influence on river ecosystems, particularly through hydromorphological changes and other impact on the aquatic environment, such as pollution, which can affect the ecological integrity of river basins. States should consider preserving waterways as part of the environment when it comes to navigation. Ecological regulations can reflect this aim, and include monitoring to ensure that navigation activities do not harm the waterway and its ecosystem.[91]

Box 29: Mekong Agreement, 1995, and the Mekong River Commission

Navigation, Mekong Agreement, 1995, and the Mekong River Commission

The Mekong River is an important transport route for its riparians, and provides its people with important access to natural resources and social facilities, including schools and health services.

Article 9 of the Mekong Agreement, 1995 provides for the freedom of navigation throughout the mainstream of the Mekong River without regard to the territorial boundaries, for transportation and communication. Additionally, the Article obliges its party to keep the Mekong River, "free from obstructions, measures, conduct and actions that might directly or indirectly impair navigability, interfere with this right or permanently make it more difficult".

Following the adoption of the Mekong Agreement, 1995, the Mekong River Commission developed its first Navigation Strategy in 2003, which facilitated negotiations between the lower Mekong States to improve navigation conditions. This cooperation also led to the *Agreement between Vietnam and Cambodia on Waterway Transportation,* 2008.

More recently, the Mekong River Commission continues to co-ordinate the implementation of a Navigation Master Plan, in accordance with the 2021-2030 Basin Development Strategy, and the 2021-2025 Mekong River Commission Strategic Plan.

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[91] International Court of Justice, *Case concerning the dispute regarding navigational and related rights (Costa Rica v. Nicaragua)*, Judgment of 13 July 2009, https://www.icj-cij.org/en/case/133/judgments, paras. 104, 109, 118 and 126.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 30: Statute of the River Uruguay, 1975

Statute of the River Uruguay, 1975

Chapter II. Navigation and Works

Article 3. The Parties shall afford each other the necessary assistance so as to provide the best possible facilities and safety for navigation.

Article 4. The Parties shall agree on provisions governing the safety on the river and the use of the main channel.

Article 5. The Commission shall assign to the Parties, following joint planning, such tasks of dredging, buoying and conservation in the sections of the main channel as it may periodically determine on the basis of the use of the channel and the availability of technical facilities.

Article 6. For the purposes indicated in article 5, each Party shall, within its jurisdiction, permit the competent services of the other Party to carry out the respective tasks, following notification through the Commission.

Other examples: Sava Agreement, 2002, Art. 10; Agreement establishing a uniform river system and creating the International Commission of the Congo-Ubangi-Sangha Basin (CICOS), 1999; and Lake Tanganyika Convention, 2003, Art. 12.

Supporting resources (*non-exhaustive*)

- INBO, *The handbook for integrated water resources management in transboundary basins of rivers, lakes and aquifers*, 2012.
- Boisson de Chazournes, L., *Fresh Water in International Law* (Oxford University Press, 2013), pp. 54-64.

Mtkvari /Kura river in Uplistsikhe, Georgia

Module 3 – Substantive content of the agreement or other arrangement

Building block: Sectoral and intersectoral issues

Key aspect: Climate change

Some of the most profound impacts of climate change will be on the hydrological cycle. Changing precipitation patterns and greater variability will impact the distribution and timing of water in many regions. Extreme events, such as droughts and floods, will become more frequent and severe and increasing temperatures will increase evaporative losses and raise the demands for water for agriculture. In addition, climate change can affect water quality. Many transboundary basins exhibit extreme seasonal or other variability. This may be exacerbated by climate change. The hydrology of other basins may be fundamentally transformed. Not all of these impacts are negative, but many of them complicate the decision-making process.

Points to consider when drafting provisions related to climate change

- **Adaptation to climate change in transboundary basins.**

Despite some uncertainty, climate change is producing significant impact in many regions of the world, and some adverse effects are already being felt. Transboundary cooperation is vital in order to prevent the negative impacts of unilateral activities, support the coordination of adaptation measures at the basin or aquifer level and jointly develop more cost-effective solutions. Adaptation plans should be developed at the basin level and ideally its measures should be integrated in multi-year basin management plans. In order to create a strong foundation for an adaptation plan, all stakeholders must participate, moving beyond physical, political and institutional borders, and working alongside domains other than water, particularly the water-food-energy-ecosystem nexus. Climate change may also have significant impacts on the economic viability of major water infrastructure. This too should be taken into account when balancing the system costs and benefits of building new infrastructure on shared systems.

- **Transboundary cooperation in adaptation.**

Transboundary cooperation in adaptation makes it possible to identify measures such as building infrastructure for protection against flooding within the basin, where it can have an optimal effect for all States sharing transboundary waters. Transboundary cooperation makes it possible to share adaptation costs and benefits and to increase the overall efficiency of adaptation within a basin.

Transboundary cooperation in adaptation can expand the knowledge base and geographical scope of adaptation measures, thereby helping to mitigate climate change impacts, prevent disasters, or increase resilience to them. The need to cooperate in order to adapt to climate change can also become an impetus for greater cooperation in transboundary basins.

- **States may decide to include specific provisions related to water scarcity.**

Situations involving water scarcity are those in which water resources are temporarily or structurally insufficient to satisfy growing demands for water from rivers, lakes and aquifers. Such scarcity may affect certain sectors disproportionately, and lead to critical gaps between needs and resources. Within the context of transboundary waters, these gaps may extend across sovereign borders. The impacts are economic, social and environmental, and are particularly notable in agriculture and in major urban areas. Provisions that set out how States cooperate during periods of water scarcity, such as reassessing allocation regimes, can help alleviate tensions associated with such periods.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 31: Buzi Agreement, 2019

Buzi Agreement, 2019

Article 16 – Climate Change

The Parties shall undertake studies to identify, adopt and implement measures to adapt and mitigate against the impacts of Climate Change in the Buzi Watercourse.

Other examples: Albufeira Convention, 1998, Arts. 18 and 19.

Supporting resources (*non-exhaustive*)

- United Nations, *Water cooperation in action: approaches, tools and processes*, Report of the Annual UN-Water Conference 2012/2013, held in Zaragoza, Spain, 8-10 January 2013, https://www.un.org/waterforlifedecade/water_cooperation_2013/pdf/water_cooperation_in_action_approaches_tools_processes.pdf .
- IPCC, *Fifth assessment report of the Inter-Governmental Panel on Climate Change*, 2014, https://www.ipcc.ch/assessment-report/ar5.
- INBO, *Handbook for Integrated Water Resources Management in Transboundary Basins of Rivers, Lakes and Aquifers*, 2012.
- UNECE, *Guidance on water and adaptation to climate change*, 2009, https://unece.org/environment-policy/publications/guidance-water-and-adaptation-climate-change.

Douro/Duero River in Portugal

Module 3 – Substantive content of the agreement or other arrangement

Building block: Sectoral and intersectoral issues

Key aspect: Spiritual aspect of water

For much of the world outside of Europe and North America - especially amongst religious, local, and/or indigenous communities - rationality and spirituality are considered as one unified whole, perpetually intertwined and ideally in balance (think of the *Taijitu*, the traditional Taoist symbol for *yin* and *yang*, for example). In the world of water, decision-makers tend to ignore the spiritual components both at the resource management level and in the dispute settlement process. However, in some parts of the world, the failure to integrate traditional rulers in water governance, or to ignore deeply entrenched rules about the spirituality of water in local communities, often results in challenges with implementation of water laws at the local level. Hence the need to consider, in some cases, the inclusion of a provision to that effect in the relevant agreement or arrangement.

What to consider when drafting provisions on the spiritual dimensions of water

- **Including spiritual aspects of water in arrangements can ensure that local communities have a voice in water management.**

While treaties do not explicitly refer to spirituality, except for the occasional vague language alluding to "cultural heritage", some river basin organizations are more explicit. For example, three African joint bodies – the Zambezi Watercourse Commission ("ZAMCOM"), the Lake Tanganyika Authority (Congo River basin), and the Volta Basin Authority – all make statements in one strategic organizational planning document or another about how the organization will operate with a central focus on respect for traditional values and local leaders, considering the waters they manage to be a source of cultural or religious heritage for the local people and future generations. Such statements should provide the basis upon which indigenous peoples' views and beliefs systems on the very spiritual nature of water are fully appreciated, respected and considered.

- **Negotiations over shared waters may require connecting across disparate worldviews, especially those that separate or integrate the worlds of rationality and spirituality.**

Even though there is little record of explicitly incorporating the spiritual aspects of water in water agreements, a domestic legal approach which has been particularly successful is the one affording some form of "legal personhood" to rivers. The Whanganui River in New Zealand, for example, is treated as a living entity with legal personhood. The legal settlement appointed two guardians to represent the river, one from the Whanganui Iwi (Maori) trust and one from the Crown. The Ganges and Yamuna (a Ganges tributary) Rivers in India also received personhood with three guardians, citing the New Zealand precedent. It is not clear what the legal implications of this ruling are, especially noting the transboundary nature of the Ganges.

How could such provisions be framed?

Box 32: New Zealand National Policy Statement for Freshwater Management, 2014

New Zealand National Policy Statement for Freshwater Management, 2014

Some advances have been made in integrating spiritual concepts in water management, notably at the national, regional, and local levels. The New Zealand National Water Policy was developed in 2014 with close participation of the Maori community, resulting in explicit language referring to the spirituality of water:

"Addressing *tāngata whenua* values and interests across all of the well-beings, and including the involvement of *iwi* and *hapū* in the overall management of fresh water, are key to meeting obligations under the Treaty of Waitangi (1840)."

"All things in the natural world have *mauri* (life force) and *wairua* (a spiritual dimension). Respect for the spiritual integrity of the environment and the *atua* (God) that created it will ensure that the *taonga* (treasure) can be protected and passed on to succeeding generations."

Supporting resources (*non-exhaustive*)

- SIWI, *People and Planet: Faith in the 2030 Agenda,* 2020, https://www.siwi.org/wp-content/uploads/2020/06/People-and_Planet_WEBB.pdf.
- UNEP, *Faith action on the UN Sustainable Development Goals: Progress and Outlook*, 2020, https://wedocs.unep.org/handle/20.500.11822/33848.
- Wolf, A. *The Spirit of Dialogue: Lessons from Faith Communities in Transforming Conflict* (Island Press, 2017).

Lake Tekapo, New Zealand

View on the Narva river bridge on the border between Estonia and Russia

Sutlej river, Himachal Pradesh, India

Module 4 - Procedural features

Building block: Regular exchange of data and information

Key Aspects:

- **General exchange of information and/or forecasts (hydrological, meteorological, hydrogeological and ecological)**
- **Information concerning planned measures and uses**
- **Possible exceptions and grounds for not disclosing information**

Arrangements on transboundary waters should include provisions on what data and information is be exchanged, which may include information on water quantity (flooding, scarcity), water quality (physico-chemical, chemical, biological and/or micro-biological parameters), geology, planned measures, early warning of accidents or extreme events (floods or droughts), water uses, sources of pollution (industrial, municipal and agricultural), and land uses, recharge and discharge zones of transboundary aquifers.

Exchanging sufficient data and information allows States sharing transboundary waters to assess the state of a watercourse and related ecosystems in an integrated and harmonized manner, based on the same criteria, using the same rules and standards (monitoring programmes, measurement systems and devices, analytical techniques, data processing and evaluation procedures). At the national level, Parties may need to harmonize the collection of the relevant data and information in a composite form, as different agencies and institutions often carry out this task. States may need to address any gaps in data, or ensure that data is capable of being harmonized.

Data and information exchange must be in accordance with international regulations related to industrial and commercial secrecy or intellectual property and the national legal systems of the Parties, especially concerning national security.

One of the criteria for determining if an arrangement is "operational" pursuant to SDG indicator 6.5.2 is whether States share transboundary rivers, lakes and aquifers to exchange data or information at least annually.

What to consider when drafting provisions on exchange of data and information

- **A clear provision on exchange of data and information in an arrangement on transboundary waters allows effective systems for monitoring and assessing situations.**

The ultimate goal of exchanging data is to provide adequate information for the protection and use of transboundary waters. As a first step, arrangements may include provisions concerning the availability and distribution of data, with the definition of terms used, to facilitate the exchange of data and information. These arrangements could also contain general provisions on the mandate of the Parties or a joint body (conditions and principles), but all the details (norms and standards, sampling and measurement conditions) would more likely be contained within an annex to an arrangement or a protocol. A protocol tends to include the operational steps in the process and offers more flexibility. It can be more easily adapted or updated without requiring the Parties to adopt another arrangement.

- **Institutions or agencies in charge of national data gathering and monitoring programmes should be involved.**

Institutions or agencies in charge of national monitoring programmes should be involved in the development of arrangements for transboundary waters, in order to propose appropriate parameters, indicators, assessment criteria, relevant margins for each parameter, deadlines and to attest to the reliability of the information.

- **Arrangements may include a commitment to develop joint information systems.**

States should consider a commitment to develop a joint information system or database to share information related to issues, such as water uses and their impacts, and qualitative and quantitative aspects of a transboundary waters common to all States sharing transboundary waters.

How could the exchange of data and information be framed? Examples from treaty practice (*non-exhaustive*)

Box 33: Agreement for the exchange of data and flood forecasts within the Meuse IRBD, 2017

Agreement for the exchange of data and flood forecasts within the Meuse IRBD, 2017

The States and Regions of the International Commission for the Meuse River, within the framework of the implementation of the first flood risk management plan for the Meuse International River Basin District, under the Floods Directive (Directive 2007/60/EC on the assessment and management of flood risks), have drawn up a multilateral agreement for the exchange of hydrological data and forecasts (heights, flows) based on the following conditions and principles:

- Maintaining the current organisation for flood warning and forecasting;
- The present agreement does not imply any obligation to modify the technical constraints (e.g. equipment including limnimeters and rainfall stations, teleinformatics, transmission channels, calculation of forecasts);
- The exchanges are free of charge and there are no additional costs;
- Reciprocity of exchanges;
- Non-dissemination of raw information to third Parties without agreement of the Contracting Parties concerned;
- Non-use for commercial purposes by the recipient.

Other examples: Agreement on the Establishment of Cuvelai Watercourse Commission, 2014, Art. 11(4); and the Agreement between Canada and the United States on the Development and Operation of the Dams in the Upper Columbia River Basin for Power and Flood Control benefits in both States, 1960 ("Columbia Treaty, 1960"), Annex A, para 2.

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp. 126-128.
- UNECE, *Guide to Implementing the Water Convention*, 2013, pp. 82-84.
- UNECE Task Force on Monitoring and Assessment, *Guidelines on Monitoring and Assessment of Transboundary Rivers,* 2000, https://unece.org/fileadmin/DAM/env/water/publications/documents/guidelinestransrivers2000.pdf.
- UNECE Task Force on Monitoring and Assessment, *Guidelines on Monitoring and Assessment of Transboundary Groundwaters*, 2000, https://unece.org/fileadmin/DAM/env/water/publications/assessment/guidelinesgroundwater.pdf.

Module 4 – Procedural features

Building block: Notification and consultation

Key aspect: Notification and consultation concerning planned measures

The requirement that States notify each other of activities that may have a significant adverse effect on another State is commonly included in arrangements on transboundary waters.[92] The 1992 Water Convention provides general provisions related to notification and consultation (Art. 9 (2)(h)). Exchanges of data and information, as well as consultations, are supposed to take place within joint bodies (see Art. 9 (2)).[93] The 1997 Watercourses Convention (Arts. 11-19) provides relatively detailed provisions concerning notification and consultation on planned measures. Third-party investors may also have their own procedures that States must follow when developing planned measures, such as the World Bank's environmental and social framework.[94]

What to consider when drafting provisions on notification and consultation

- **Joint bodies can play an important role in notification and consultation.**

Where joint bodies have been established by the Parties to an arrangement, they often play a key role in both notification and consultation. For example, under the Zambezi Agreement, 2004, a Party is obliged to submit a notification letter and accompanying data and information to the Secretariat of ZAMCOM. Pursuant to the Agreement, the Secretariat is then responsible for determining whether the information received is adequate and complete, before transmitting such information to other Parties (Art.16). ZAMCOM may also play a role during any consultation process, by making recommendations to the Parties concerned, undertaking technical investigations, or providing a neutral forum for Parties to resolve any differences.[95]

- **Balancing interests of the Party or Parties planning a measure, and the Party or Parties potentially affected.**

Notification and consultation procedures seek to strike a balance between a Party or Parties wishing to develop water resources and their beneficial uses, and a Party or Parties that may be concerned about any potential impact of such developments. In the Mekong Agreement, 1995, notification and consultation is described as "neither a right to veto the use nor unilateral right to use water by any riparian without taking into account other riparians' rights" (Chapter II). Notification and consultation should therefore offer the right of potentially affected States to be informed of a planned project and to have sufficient data and information to evaluate its potential impacts, and to raise any likely concerns or potential mitigation measures. At the same time, it provides the planning State the right to utilize an international watercourse if, after undertaking that notification and consultation process, it is satisfied that its actions are consistent with the principle of equitable and reasonable utilization and the no-harm rule.

- **Environmental impact assessments are integral to the notification and consultation process.**

Agreements or other arrangements that include a provision on notification and consultation tend to also include a requirement that any formal notification procedure is accompanied by the results of an environmental impact assessment for the particular project or activity in question. In other circumstances, notification may act as a trigger by which States develop a joint environmental impact assessment. [96]

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92 See for example, *Pulp Mills case* no. 32.

93 The 1991 Convention on Environmental Impact Assessment in a Transboundary Context (1991 Espoo Convention) includes more detailed requirements. See building block: Establishment of Joint Bodies, pp. 73-76.

94 Salman, S.M.A., *The World Bank Policy for Projects on International Waterways – An Historical and Legal Analysis* (World Bank 2009).

95 See ZAMCOM, *Procedures for Notification of Planned Measures*, 2017, http://www.zambezicommission.org/sites/default/files/clusters_pdfs/ZAMCOM-Procedures-for-Notification-of-Planned-Measures.pdf.

96 For further information on environmental impact assessment within arrangements on transboundary waters, see building block: Strategic and environmental impact assessment, pp. 75-78.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 34: Albufeira Convention, 1998

Albufeira Convention, 1998

Article 8

1. Whenever a Party considers that a project or an activity to be undertaken in its territory (…) causes or may cause a transboundary impact, it shall notify the other Party thereof and provide it with the relevant information.
2. If a Party considers that a project or an activity (…) causes or may cause a transboundary impact and has not been notified thereof, it shall request the necessary information from the other Party, stating the grounds for such request.
3. As a result of the above-mentioned notification, the Parties shall enter into consultations whenever there is sufficient evidence that a project or activity (…) causes or may cause a transboundary impact.
4. These consultations shall be conducted within the Commission during a period of six months which may be extended by mutual agreement for an equal period, with the aim of providing a solution to prevent, eliminate, mitigate or control the impacts, and, when appropriate, to establish the forms of responsibility in accordance with the applicable International and Community Laws. In such an event, the abovementioned period may be extended twice.
5. The provisions of Article 26 of this Convention shall apply whenever the Parties fail to reach an agreement within the Commission during the period defined in the previous paragraph.
6. If in the course of the above-mentioned consultations, the Parties ascertain the existence of transboundary impact, they shall suspend the execution of the project, wholly or in part, for a mutually acceptable period, unless a different agreement is reached within a period of two months. Furthermore, in the event of ongoing activities, the Parties shall not undertake any further measures which may exacerbate the situation.
7. In the event of the suspension of the project or the failure to carry out the measures referred to in previous paragraph, involving irreparable harm to the protection of public health or safety, or of any other relevant public interest, the Party concerned may carry on with the execution of the project or proceed with the activity, without prejudice to its possible responsibility.

Other examples: the 1997 Watercourses Convention, Arts 11-19; the Niger Basin Water Charter, 2008, Arts. 19-24; and ORASECOM Agreement, 2000, Art. 7.

Supporting resources *(non-exhaustive)*

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp. 139-151 and 224-227.
- UNECE, *Guide to Implementing the Water Convention*, 2013, pp. 82-84.
- Ministry of the Environment (Finland), Ministry of the Environment (Sweden) and Ministry of Housing, Spatial Planning and the Environment (the Netherlands), *Guidance on the Practical Application of the Espoo Convention*, 2003, https://unece.org/DAM/env/eia/documents/practical_guide/practical_guide.pdf.
- Salman, S.M.A. *The World Bank Policy for Projects on International Waterways – An Historical and Legal Analysis* (World Bank, 2009).

Module 4 - Procedural features

Building block: Public participation and stakeholder involvement

Key Aspects:

- **Access to information for the public;**
- **Public participation in decision-making processes;**
- **Public participation in implementation;**
- **Non-discrimination in access to judicial and other remedies for natural or juridical persons affected by transboundary harm;**
- **Local and indigenous communities, recognizing traditional ecological knowledge and different ways of knowing.**

The involvement of stakeholders or the public is an important aspect of transboundary water management.[97] Participation helps to raise awareness of issues that may affect the public. Participation can also ensure that decision-makers are cognizant of the needs and concerns of those potentially affected by any of their decisions. In turn, this may lead to more responsive and more creative decision-making. Additionally, effective stakeholder participation can lead to greater acceptance of any decisions made. Participation can also contribute to social learning, by assisting stakeholders in collectively learning how to manage complex systems, such as transboundary waters. Conversely, foreign-office representatives may feel impeded by the necessity to include local interests in the international arena, or that transparency can weigh down negotiating strategies.

What to consider when drafting provisions related to public participation

- **Provisions should consider the three key pillars of public participation set out in the 1998 Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (the "Aarhus Convention, 1998").**

The Aarhus Convention, 1998 sets out the three key pillars of public participation, namely access to information, participation in decision-making and access to justice. The 1992 Water Convention includes the right of the public to information whereby "riparian Parties shall ensure that information on the conditions of transboundary waters, measures taken or planned to be taken to prevent, control and reduce transboundary impact, and the effectiveness of those measures, is made available to the public" (Art. 16). No similar provision is provided for in the 1997 Watercourses Convention, although it could be argued that public participation is an important means by which States sharing transboundary waters fulfil their commitment under the Convention to take "all appropriate measures" to prevent significant harm (Art. 7). About 35 per cent of treaties (274 of 765) and of river basin organizations (42 of 119) mention public participation explicitly, but only a few arrangements for transboundary water cooperation also provide an explicit right of participation. The Dniester Treaty, 2012, for instance, stipulates that "each Contracting Party shall … ensure public access to information on the status of the Dniester River Basin and public participation in decision-making related to protection and sustainable development of the Dniester basin, as well as projects likely to have significant impact on the status of water and other natural resources and ecosystems" (Art. 21).

- **A provision may include access to justice and the right of non-discrimination within a transboundary context.**

In relation to access to justice, the 1997 Watercourses Convention includes a provision that stipulates that any legal or natural person who has suffered harm as a result of activities on an international watercourse, or on a basin thereto will be entitled to seek legal redress for that harm in the State where those activities were carried out (Art. 32). States sharing transboundary waters cannot therefore discriminate on the basis of nationality when

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[97] See Tignino M. and Sangbana, K. (eds.), *Public Participation and Water Resources Management: Where do we stand in international law?* (UNESCO, 2015), https://www.unige.ch/droit/eau/fr/publications/liste/2015/publicparticipation.

natural and legal persons seek compensation or other relief for any significant transboundary harm. However, in practice significant financial, administrative and political barriers may preclude individuals, legal persons or communities in one watercourse State seeking redress for harm caused by activities in another State.

- **Where relevant, an arrangement may refer to the rights of indigenous communities.**

The legal right of indigenous peoples to participate in decision-making is enshrined in the 2007 United Nations Declaration on the Rights of Indigenous Peoples, which requires States to consult and cooperate in good faith with indigenous peoples to obtain, "free, prior and informed consent", before adopting and implementing activities that may affect them. As noted in the section on spiritual considerations, indigenous communities often have both a long and deep understanding of watershed systems that can extend well beyond what is measured through "modern" science. In recent years, national and international water managers have been learning how to consult with this "traditional ecological knowledge" in collaboration with those who have been engaging with their watersheds, often for millennia.

- **Provisions included in an arrangement on transboundary waters could recognize the value of local knowledge.**

Many joint bodies, such as the Mekong River Commission, include an explicit path for participation of stakeholders, including local and faith communities, and thus can incorporate far-reaching expertise in areas such as flood adaptation and ecological systems into transboundary water management.

How could provisions related to public participation be framed? Examples from treaty practice (*non-exhaustive*)

Box 35: Dniester Treaty, 2012

Dniester Treaty, 2012

Article 21

1. Each Contracting Party shall, in accordance with the national legislation of its state, ensure public access to information on the status of the Dniester River basin and public participation in decision-making related to protection and sustainable development of the Dniester basin, as well as to projects likely to have significant impact on the status of water and other natural resources and ecosystems. Such access includes informing the public and providing information on its request.
2. Public participation in decision-making related to protection and sustainable development of the Dniester River basin shall imply informing the public concerned in an adequate, timely and effective manner of the proposed activity at the earliest stage of the decision-making procedure, providing opportunities to submit comments, information, analysis or opinions on the proposed activity and ensuring due account of the outcome of public participation in the relevant decision-making process.
3. The Contracting Parties shall facilitate public participation in activities related to implementation of the present Treaty, including activities of the Commission.

Other examples: Convention for Shared Waters in Central Africa, 2017, Art. 1; and Great Lakes Agreement, 2012.

Supporting resources (*non-exhaustive*)

- UNECE, *Guide to implementing the Water Convention*, 2013, pp. 93-97.
- Schulze, S., *Public participation in the governance of transboundary water resources – Mechanisms provided by the River Basin Organization*, 2012, https://www.cairn.info/revue-l-europe-en-formation-2012-3-page-49.htm.
- Sangbana, K., "The role of non-State actors in the development and implementation of international water law", in Rieu-Clarke, A., Allan A., and Hendry, S. (eds), *Routledge Handbook of Water Law and Policy* (Routledge, 2017), pp. 287-296.
- Macpherson, E., "Beyond Recognition: Lessons from Chile for allocating indigenous water rights in Australia", *UNSW Law Journal*, vol. 40(2), 2017.

Module 4 – Procedural features

Building block: Strategic and environmental impact assessment

Key aspects:

- Relevant procedures;
- Possible involvement of third Parties (e.g., joint body)

Environmental impact assessment (EIA) and strategic environmental assessment (SEA) are both forms of environmental assessment. They are procedural instruments of preventive environmental policy and as such both have similar goals and similar features. EIA and SEA differ significantly, however, with regard to the type of the activities covered and the scope of the assessment.[98]

EIA of planned activities is an important tool for an integrated approach to the protection of the environment, which requires a comprehensive assessment of the environmental and social impacts of an activity.[99] Principle 17 of the Rio Declaration provides that EIA, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and that are subject to evaluation by a competent national authority.[100] The International Court of Justice (ICJ), in the *Pulp Mills* case, held that "it is for each State to determine in its domestic legislation or in the authorization process for the project, the specific content of the environmental impact assessment required in each case, having regard to the nature and magnitude of the proposed development and its likely adverse impact on the environment as well as to the need to exercise due diligence in conducting such an assessment."[101]. The Court further considered that "an environmental impact assessment must be conducted prior to the implementation of a project. Moreover, once operations have started and, where necessary, throughout the life of the project, continuous monitoring of its effects on the environment shall be undertaken."[102]

EIA has been included in the national legislation of a large number of States and there is much experience with its implementation. The requirement of assessment of adverse effects of activities and provision of mitigation measures has been incorporated in various forms in many international instruments.[103] Having specific regard to transboundary impact, reference should be made to the 2001 ILC *Draft Articles on Prevention of Transboundary Harm from Hazardous Activities* (Art. 7),[104] the 1987 UNEP *Goals and Principles of Environmental Impact Assessment* (Principle 12)[105] and, most notably the 1992 Water Convention (Arts. 3(1) (h) and 9(2) (j)), the 1997 Watercourses Convention (Art. 12), and the 1991 UNECE Convention on Environmental Impact Assessment in a Transboundary Context.

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98 UNECE, *Practical guidance on reforming legal and institutional structures with regard to the application of the Protocol on Strategic Environmental Assessment,* 2017, https://unece.org/DAM/env/eia/Publications/2017/ece.mp.eia.wg.2.2016.INF.9_EN_draft_practical_guidance_on_reforms_FINAL_rev_LAY_OUT_27.05__cover_.pdf.

99 UNECE, *Current Policies, Strategies and Aspects of Environmental Impact Assessment in a Transboundary Context*, 1996, https://digitallibrary.un.org/record/237328?ln=en , p. vii.

100 Rio Declaration no. 49.

101 See *Pulp Mills case* no. 32, para. 205.

102 Ibid.

103 See, for instance, *Transboundary EIA provisions and initiatives in selected Regional and Multilateral Environmental Agreements*, 2006, https://unece.org/DAM/env/eia/documents/links_between_conventions/Transboundary%20EIA%20Review%20-%20Main.pdf.

104 "Any decision in respect of the authorization of an activity within the scope of the present articles shall, in particular, be based on an assessment of the possible transboundary harm caused by that activity, including any environmental impact assessment", ILC, *Draft Articles on Prevention of Transboundary Harm from Hazardous Activities*, 2001, https://legal.un.org/ilc/texts/instruments/english/commentaries/9_7_2001.pdf, p. 157.

105 "When information provided as part of an EIA indicates that the environment within another State is likely to be significantly affected by a proposed activity, the State in which the activity is being planned should, to the extent possible:
[a] notify the potentially affected State of the proposed activity;
[b] transmit to the potentially affected State any relevant information from the EIA, the transmission of which is not prohibited by national laws or regulations; and
[c] when it is agreed between the States concerned, enter into timely consultations", UNEP, *Goals and Principles of Environmental Impact Assessment*, 2087, https://digitallibrary.un.org/record/42521?ln=en.

Compared to EIAs for individual projects, SEAs take place much earlier in the decision-making process and targets government plans, programmes, policies and legislation.[106] The assessment under EIA procedure focuses on the physical impact of the project on the environment while the assessment in SEA, bearing in mind the larger scale and less precise data, focuses rather on the achievement of relevant environmental objectives.[107] SEA is also able to capture cumulative effects of individual projects at a very early planning stage.[108] A river basin management plan would be a good example of a strategic document subject to SEA.

Points to consider when drafting provisions related to EIA and SEA

- **EIA is applied at the project level.**

Any provision related to EIA should recognize that EIAs take place at a project level. In so doing, the EIAs should aim to identify and assess the likely environmental impacts of the project; to report on those impacts and on measures to be taken to prevent, reduce or mitigate them; to allow the public and other stakeholders to comment on the project and the EIA report; and to provide this information – the EIA report and the comments of the public and other stakeholders – to the decision-maker.[109]

- **SEA is applied at the level of plans, programmes, policies and legislation.**

Any provision related to SEA should recognize that SEAs take place at a level of strategic decisions. SEA supports the consideration of environmental and social aspects on a par with economic aspects. In so doing, the SEAs shall include the determination of the scope of the SEA report and its preparation; the carrying out of public participation and consultations on the draft strategic document and the SEA report; and the taking into account of the SEA report and the results of the public participation and consultations in a plan, programme, policy or a piece of legislation.

- **Joint bodies may play a role in conducting joint EIAs and SEAs.**

States may consider providing any joint body established under an arrangement with the task of facilitating notification, exchange of information and consultations under transboundary EIA and SEA procedures. For instance, Article 9 (2) (j) of the Water Convention expressly provides that a task of a joint body should be, "to participate in the implementation of environmental impact assessments relating to transboundary waters, in accordance with appropriate international regulations".

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106 UNECE, *Protocol on Strategic Environmental Assessment: Facts and Benefits*, 2016, https://unece.org/DAM/env/eia/Publications/2016/Protocol_on_SEA/1609217_UNECE_HR.pdf.

107 UNECE, *Practical guidance on reforming legal and institutional structures with regard to the application of the Protocol on Strategic Environmental Assessment,* 2017, https://unece.org/DAM/env/eia/Publications/2017/ece.mp.eia.wg.2.2016.INF.9_EN_draft_practical_guidance_on_reforms_FINAL_rev_LAY_OUT_27.05__cover_.pdf.

108 Protocol on Strategic Environmental Assessment: Facts and Benefits, no. 104.

109 UNECE, *Benefits and costs of transboundary EIA*, 2007, https://unece.org/DAM/env/eia/documents/pamphlets/Pamphlet%20-%20Benefits%20of%20transboundary%20EIA.pdf.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 36: Lake Tanganyika Convention, 2003

Lake Tanganyika Convention, 2003

Article 15 – Environmental Impact Assessment

1. Each Contracting State, in order to avoid and minimize adverse impacts, shall:
   a) adopt and implement appropriate legal, administrative and other measures requiring an assessment to be conducted of the environmental impacts of proposed projects and of activities within its jurisdiction or control, that are likely to give rise to adverse impacts;
   b) adopt and implement appropriate legal and administrative procedures and institutional arrangements to ensure that when public policies, plans and programs are being developed and implemented, the consequences for the Lake Basin are taken into account including any comments received from other Contracting States;
   c) monitor compliance with and enforce any conditions in development consents or otherauthorizations that were imposed for the purpose of protecting the Lake Basin.
2. The Contracting State within whose jurisdiction a proposed activity listed in Part A of Annex I is planned to take place, shall ensure that the environmental impact assessment procedure results in the production of documentation conforming with Part B of Annex I.
3. A Contracting State that may be affected by a proposed activity listed in Part A of Annex I shall, at the request of a Contracting State under whose jurisdiction the proposed activity is planned to take place, promptly provide the latter through the Secretariat, with all information relevant to the assessment of the potential trans-boundary adverse impacts within the jurisdiction of the affected Contracting State as is reasonably obtainable.
4. The Contracting State or States under whose jurisdiction a proposed activity is planned to take place shall, after completion of the environmental impact assessment documentation, consult with the other Contracting States and the Secretariat on measures to prevent, reduce or eliminate transboundary and other impacts including any post-project monitoring and analysis that may be required. At the commencement of the consultation the Contracting States shall agree a reasonable timetable for the duration of the consultation period.
5. The Contracting States shall ensure that in reaching the final decision on the proposed activity, due account is taken of the outcome of the environmental impact assessment procedure, including the environmental impact assessment documentation, comments on it and objections to it and the consultations under this

Lake Tanganyika at Uvira, Democratic Republic of Congo

article. The Contracting State under whose jurisdiction the final decision is made shall provide the Secretariat with a copy of the final decision.

6. If after an activity has been authorized in accordance with this article, the Secretariat or aContracting State obtains additional information on the trans-boundary adverse impact of the activity which was not available at the time the decision was made and which could have materially affected the decision, this information shall be communicated immediately to the other Contracting States through the Secretariat and the Contracting States shall consult to decide whether or not the decision should be reviewed or additional measures taken to reduce or eliminate the impact.
7. The Contracting States shall co-operate in the development of technical, legal and other measures concerning joint trans-boundary environmental impact procedures.

Other examples: Albufeira Convention, 1998. Art. 9; and the 2003 Procedures for Notification, Prior Consultation and Agreement (PNPCA) under the Mekong Agreement, 1995.

Supporting resources (***non-exhaustive***)

- UNECE, *Guide to Implementing the Water Convention*, 2013, pp. 53-54.
- Mekong River Commission, *Guidelines for Transboundary Environmental Impact Assessment in the Lower Mekong Basin,* 2018, https://www.mrcmekong.org/assets/Publications/TbEIA-Guidelines-Final-version-25-9-2018.pdf.
- OKACOM, *OKACOM Notification, Consultation and Negotiation (NCN) Guidelines*, 2018, https://www.okacom.org/sites/default/files/publications/OKACOM%20Notification%20Consultation%20Guidelines.pdf
- UNEP, *Assessing Environmental Impacts: A Global Review of Legislation*, 2018, https://www.unep-wcmc.org/system/dataset_file_fields/files/000/000/494/original/Assessing_Environmental_Impacts_A_Global_Overview_of_Legislation_report_fa_20_April_.pdf?1524215262.
- UNDP, *Social and Environmental Standards (SES): Guidance Note on Social and Environmental Assessment and Management*, 2020, https://info.undp.org/sites/bpps/SES_Toolkit/SES%20Document%20Library/Uploaded%20October%202016/UNDP%20SES%20Assessment%20and%20Management%20GN%20-%20FInal%20Nov2020.pdf.

Module 4 – Procedural features

Building block: Joint monitoring and assessment

Key aspects:

- **Coordinated and harmonized data gathering and processing methods;**
- **Joint databases, digitalization of data.**

Water quantity and quality monitoring is an essential part of most water management activity, including within transboundary basins. Knowledge for a decision maker on the status of the water bodies depends on reliable information collected through monitoring systems. Each party will likely maintain its own national hydrological models. The harmonization of data collection, management, and storage consistent with national standards, and requirements can reduce costs, improve coherency, and reduce the likelihood of disputes. Downstream States have a keen interest in receiving information from upstream States related to hydrology (for flood forecasting) or the qualitative status (for pollution prevention) of the incoming waters. Upstream States are interested in getting data from downstream States, e.g., with regard to fish migration to increase biodiversity in the basin. Also, monitoring data is an important indicator of the status of the shared transboundary aquifers. Joint bodies usually aim to coordinate monitoring and assessment between States sharing transboundary waters. Joint evaluation can provide information on the availability of "free water resources", which can be used, without threatening existing uses.

What to consider when drafting provisions on joint monitoring and assessment

- **Basic requirements for joint monitoring and assessment.**

Basic requirements for joint monitoring and assessment that might be set out in a provision of an arrangement, annex or protocol include coordinated or harmonized data gathering and processing methods, databases, digitalization of data, providing access to the information via Internet; compatibility of laboratories taking part in the monitoring; joint research and studies, exchange of knowledge and use of models; monitoring arrangements (regulations); and coordinated or harmonized monitoring and assessment programmes.

- **Monitoring networks usually operate at a national level.**

Monitoring networks usually operate at a national level, although some do operate at a transboundary level through a basin or sub-basin arrangement. Without methodical harmonization of information obtained from national systems, especially related to water quality, river, lakes and aquifers cannot be evaluated jointly. Joint evaluation is the basis of joint measures.

Box 37: Joint Danube Survey (JDS)

Joint Danube Survey (JDS)

JDS is one of the most comprehensive examples of surface-water quality monitoring ever done on a major river. The objective of the JDS is to gather additional data of selected elements of water quality beyond the information provided by the Transnational Monitoring Network (TNMN) on the entire length of the Danube River and its major tributaries in a way that results are readily comparable. The project harmonizes water monitoring practices across the Danube States, through use of unified methods and sampling practices for the participating laboratories. Special components (micropollutants, microplastic, etc.) are centralized, and basic parameters are analyzed by national experts. Three JDSs have been previously conducted - in 2001, 2007 and 2013 - and the fourth of its kind, JDS4, took place throughout 2019 at 51 sampling sites in 13 States across the Danube River Basin.

The JDS implementation is also an important tool to raise awareness of the Danube's water quality and ongoing protection efforts.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 38: Dniester Treaty, 2012

Dniester Treaty, 2012

Article 16: Monitoring and environmental performance review

1. In order to obtain regular information on the status of the Dniester River basin, the Contracting Parties shall carry out monitoring on coordinated programs. The monitoring data shall be made freely accessible to the Contracting Parties, which shall exchange it according to the coordinated procedure.
2. The Contracting Parties shall, at regular intervals, carry out individual and, where appropriate, joint assessments of the conditions of water and other natural resources and ecosystems of the Dniester River basin, as well as the effectiveness of measures taken for the prevention, control and reduction of transboundary impact. The results of these assessments shall be made available to the public in a timely manner.
3. Each Contracting Party shall, on the basis of reciprocity, ensure access of specially authorized persons to the coordinated joint water sampling stations.

Other examples: Agreement between Estonia and Russia on Cooperation in Protection and Sustainable Use of Transboundary Waters, 1997, Art. 7; and Rhine Convention, 1999, Art. 5(2).

Supporting resources (*non-exhaustive*)

- UNECE, *Strategies for monitoring and assessment of transboundary rivers, lakes and groundwater,* 2006, https://unece.org/DAM/env/water/publications/assessment/StrategiesM_A.pdf .
- UNECE, *Guide to Implementing the Water Convention*, 2013, pp. 80-81.
- Lipponen, A., and Kauppi, L., "Monitoring and assessment and the duty of cooperation
- under the Water Convention: Exchange of Information Among the Riparian Parties". in Tanzi A., *et al.* (eds.), *The UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes - Its Contribution to International Water Cooperation* (Brill, 2015), pp. 249-267.

River de la Plata (River Plate) in Montevideo, Uruguay

Khabarovsk bridge over Amur River in Khabarovsk, Russia

Module 5 - Implementation, institutional framework and dispute settlement

Building block: Implementation at national level

Key aspects:

- Designation of relevant national authorities;
- Implementing measures;
- Implementation of decisions and recommendations of joint bodies (if applicable).

National measures are critical to the successful implementation of the obligations contained in an arrangement for transboundary waters. National implementation requires the presence of the regulatory and institutional framework for implementation, compliance and enforcement. Thus, it is important to include operational provisions in the decisions and recommendations of the joint bodies to detail how the Parties should implement them at national level.

For most States, especially developing States, a key issue to be considered is human resources, as the requisite skilled personnel is an important element in carrying out duties. The national implementation plan needs to be drawn up with detailed public awareness and an information-sharing processes that will engage all relevant stakeholders.

What to consider when drafting provisions on national implementation

- **The work of a joint body is anchored in the activities of national bodies carrying out obligations undertaken by States.**

The relevant institutional arrangements at the national level will need to commence with the identification of the appropriate institution(s) to lead the implementation drive. Depending on the governance framework in a State, it may become necessary to create joint or inter-ministerial structures for national level implementation. Often a national focal point is appointed with the clearly assigned role of liaising with the joint body on detailed matters for all actors.

- **Implementation measures should consider the particular roles that reflect the obligations undertaken in the arrangement.**

It can be effective to develop a national implementation plan in consultation with all relevant stakeholders. This plan should set out the key actors and their roles in the implementation process. At the national level, systems for monitoring and evaluation with the responsible institution should be put in place. To be able to comply with international obligations, the national implementation measures should assign roles reflective of every obligation to be fulfilled. Monitoring and evaluation should also target all obligations by States. Additionally, it can help to put in place periodic reviews for the national implementation plans. In some transboundary water arrangements, States have delegated a supranational authority to the joint body, and the joint body itself implements the decisions in the States sharing transboundary waters.

Box 39: Volta Basin Authority Strategic Plan 2010-2014

Volta Basin Authority Strategic Plan 2010-2014

The Parties would usually indicate the types of cooperation that are appropriate to ensure implementation of obligations at the global, regional and sub-regional levels. This can happen through the work of organizations, and through consultation with national stakeholders including non-State actors such as NGOs, civil society organizations, youth groups, women's groups and such relevant groups involved in the water sector, to ensure effective development, implementation and updating of their implementation plans.

Volta River, Ghana

How the implementation provisions at the national level could be framed? Examples from treaty practice (*non-exhaustive*)

Box 40: Protocol on sediment management to the Framework Agreement on the Sava River basin, 2015

Protocol on sediment management to the Framework Agreement on the Sava River basin, 2015

Article 6: Coordination/Harmonization of plans

The Parties shall take appropriate steps to coordinate and/or harmonize the Sediment Management Plan, the Sava River Basin Management Plan and other plans and programmes dealing with water management and sediment management for achieving common synergies and benefits having regard to the objectives of the FASRB accordingly.

Article 7: Coordinated system of sediment monitoring

The Parties shall establish a coordinated system of sediment monitoring in order to provide all data necessary for development and implementation of the Sediment Management Plan.

Article 8: Dredging

1. The Parties shall perform only maintenance and environmental remedial dredging.
2. Capital dredging shall be allowed only in the designated areas that are in accordance with Sediment Management Plan and national law.
3. The dredging shall be performed only by a natural or legal person, which is, in accordance with national law of the Party, entitled to perform dredging.

Article 9: Information on planned dredging

1. Each Party shall develop the Information on Planned Dredging on yearly basis.
2. Until the Sediment Management Plan is adopted, the Information on Planned Dredging shall contain at least the following:
   a) planned locations and types of dredging including assessment of quantity and quality of sediment to be dredged for Sava River and its main tributaries;
   b) methods for sediment disposal;
   c) methods for sediment treatment in case the sediment is polluted;
   d) summarized quantities of dredged sediment for the sub-basins of other tributaries.

Supporting resources (*non-exhaustive*)

- International Sava River Basin Commission, *Protocol on sediment management to the framework agreement on the Sava River basin*, 2015, http://www.savacommission.org/basic_docs.
- Volta Basin Authority, *Volta Basin Authority Strategic Plan 2010-2014,* 2010, https://abv.int/en/vsip-project.

Mekong River delta, Can Tho, Viet Nam

Module 5 - Implementation, institutional framework and dispute settlement

Building block: Establishment of joint bodies

Key aspects:

- **Status of the joint body and legal personality**
- **Structure, tasks and functions, composition, working languages, decision making process**
- **Other supporting bodies (e.g., working groups, operational committees, scientific councils, technical bodies)**
- **Representation and status of non-State actors within the joint body (e.g., consultative, participation in the voting procedure) and admission rules (if applicable).**

Article 9(2) of the 1992 Water Convention requires that arrangements on transboundary waters, "shall provide for the establishment of joint bodies". According to the Convention, a joint body "means any bilateral or multilateral commission or other appropriate arrangements for cooperation between the Riparian Parties". It is important to note that joint bodies exist in many forms and shapes, with a wide range of competencies from institutions with very limited coordination functions, such as a permanent expert group between two ministries, to international river commissions with strong implementation competencies.

Upon its establishment, a joint body for transboundary waters often becomes a legally recognized actor in international law and, through a mandate provided by the relevant States, has the legal personality to negotiate, enter into agreements and develop international laws and norms. The joint body then takes its institutional form, e.g., structure, composition, and working languages, and assumes the tasks and functions vested in it by the Parties. The principles, norms, rules, procedures and programmes that have been agreed upon by the legally recognized actors on certain specified and particular issues therefore reflect the legal nature of the joint body.[110]

Despite their diverse forms, most joint bodies share common features, such as a decision-making body meeting at regular intervals, the establishment of executive bodies and subsidiary bodies (working groups), and the representation of all States sharing transboundary waters in the different institutional bodies.

Depending on the mandate given by States sharing transboundary waters, joint bodies will adopt political, technical and administrative arms with varied and complementary functions. The political implications of activities by joint bodies of Parties may be addressed at a high-level, through a decision-making body, such as the Conference of Heads of States, a Meeting of the Parties (MOP), the Council of Ministers or the Conference of Parties (COP), usually headed by officials authorized for that purpose by States. The commitment of the political heads to engage in the work of the decision-making body is of key importance because, at this level, States may be building upon varying and expanding obligations as compared to those originally adopted. Often the involvement of the political heads is important, as political will to carry out obligations can make or unmake a joint body.[111] The frequency and richness of the decision-making body will facilitate the progress of the work of the joint body.

The work of the decision-making body is often facilitated by a secretariat in charge of the day-to-day direction of the work of the joint body. The secretariat organizes the meetings of the joint body and any established working groups, and facilitates the implementation of decisions. Often, to get the full

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[110] Levy, M.A., *et al*, "The study of international regimes", *European Journal of International Relations*, vol. 1(3), 1995, pp. 267-330.

[111] Ampomah, B.Y., Adjei, B.A. and Youkhana, E., *The transboundary water resources management regime of the Volta Basin*, , 2008, https://www.econstor.eu/bitstream/10419/88367/1/579201295.pdf.

cooperation of the States, recruitment of staff of the secretariats must be open to the citizens of party States. There is also the need to have a budgetary allocation for the work of the secretariat and any working groups.

In addition to the secretariat, the creation of other supporting bodies such as working groups, operational committees, scientific councils and technical bodies with experts on specific topics relevant to the basin aid in the effective working of the joint body. These groups should also draw up and implement the monitoring and assessment strategy, including its technical, financial and organizational aspects. The decision-making body may guide the secretariat to develop a reporting format for all supporting bodies. Also, the decision-making body must set aside time periods to review the reports of tasks assigned to any supporting bodies, and also review the working structures of these bodies.

What to consider when drafting provisions on joint bodies

- **Provisions on joint bodies should create a legal personality for the institution and give it the ability to undertake legal duties and obligations.**

An arrangement that establishes a joint body should clearly set out its legal personality and provide an appropriate mandate for that body to fulfil its duties and obligations. The arrangement should also provide supporting bodies, such as a secretariat and working groups, with sufficient legal mandate to fulfil their tasks and functions.

- **An arrangement that sets up a joint body must put in place provisions that will create substantive and procedural obligations and rights.**

The work of the joint body needs to be guided by substantive and procedural rules. This will guide the joint body on how to direct Parties in the compliance with and implementation of the obligations undertaken. It will also assist the Parties to have a clear view of how to grow the treaty regime. Although the work of the joint body revolves around the decision-making body and their process for making decisions, the Parties to an arrangement should consider making non-State actors an active part in the consultative and participatory processes. The admission processes for these non-State actors should be laid out in an arrangement to consider how a non-State actor can be represented and work in a joint body and its supporting bodies (e.g., consultative function, or participation in the voting). For example, non-State actors in the geographical region, or who contribute financially and technically, can be admitted as members or observers of the joint body. In the same way, the rules for dismissal or removal of these non-State actors should be clearly laid out. Customarily, however, voting and decision making is limited to State parties. However, if possible, on certain stated topics and issues, non-State actors may be allowed to vote to a limited extent. Allowing voting may create the commitment of non-State actors, especially those that actively contribute to the work of the decision-making body, financially and technically.

How can provisions on joint bodies and other supporting bodies be framed? Examples from treaty practice (*non-exhaustive*)

Box 41: Volta Basin Authority Convention, 2007

Volta Basin Authority Convention, 2007

Article 3

1. For the purpose of ensuring international cooperation for the rational and sustainable management of the water resources of the Volta basin and for the socio-economic integration among the Parties herein, there is hereby established an organization called the Volta Basin Authority (VBA) hereinafter referred to as the 'Authority'.
2. The Authority shall have the status of an international organization enjoying thereto the privileges and immunities of an international legal entity.

ORGANS, SPECIFIC OBJECTIVES AND OPERATING RULES

Article 8

The following shall constitute the permanent administrative organs of the Authority:

a) The Assembly of Heads of State and Government;
b) The Council of Ministers in charge of Water Resources;
c) The Forum of the Parties involved in the Volta basin development:
d) The Committee of Experts:
e) The Executive Directorate of the Authority.

2. The Council of Ministers may, as and when necessary, establish any other organ of the Authority.
3. The Executive Director of the Authority shall enjoy all the privileges and immunities granted to Heads of Diplomatic missions.

Other examples: Statute (Revised) of the Interstate Commission for Water Coordination of Central Asia, 2008; and the Agreement between the Government of the Republic of Botswana, and the Republic of Namibia on the Establishment of a Permanent Okavango River Basin Water Commission (OKACOM), 1994.

Supporting resources (*non-exhaustive*)

- UNECE, *River basin commissions and other institutions for transboundary water cooperation*, 2009, https://unece.org/DAM/env/water/documents/CWC%20publication%20joint%20bodies.pdf.
- UNECE, *Guide to Implementing the Water Convention*, 2013, pp. 70-80.
- UNECE, *Principles for Effective Joint Bodies for Transboundary Water Cooperation*, 2017, https://unece.org/fr/environment-policy/publications/principles-effective-joint-bodies-transboundary-water-cooperation.
- Ampomah, B.Y., Adjei, B.A. and Youkhana, E., *The transboundary water resources management regime of the Volta Basin*, 2008, https://www.econstor.eu/bitstream/10419/88367/1/579201295.pdf.

Module 5 - Implementation, institutional framework and dispute settlement

Building block: Financing

Key aspects:

- Financing of the institutional structure (meetings, secretariat)
- Financing of joint activities (e.g., relevant research and studies, actions.)

Transboundary water management requires addressing a variety of complex environmental, socio-economic and political challenges that might involve considerable costs, such as the those associated with the construction of infrastructure, the acquisition of monitoring equipment, and the development of studies. Different funding and financing sources might be required at different stages of management and development. Usually, at least core costs of joint bodies should be covered from national budgets, mainly for reasons of sustainability. In some cases, national budgets might not be sufficient to address such challenges, particularly in developing States where funds might be diverted to other priorities. In these scenarios, alternative and innovative mechanisms could represent a suitable option to fill finance gaps.

Financial resources are needed to cover core institutional costs such as salaries, office facilities, as well as programme costs, including the collection of data and information to monitor the state and quality of waters.

Major funding is required for activities such as the reliable collection and exchange of data and information, the strengthening of the technical capacities of water managers and the active involvement of local communities and civil society that, when implemented adequately, can ensure enhanced management and governance of waters. Some of these costs can be covered at the national level but often States and joint bodies need to attract different forms of funding and financing and to mobilize funds for the better protection, use and development of transboundary waters.

What to consider when drafting provisions related to financing

- **Funding for joint bodies should come primarily from States' budgets.**

Arrangements on transboundary waters should ideally expressly define how the costs between States will be calculated and shared. Public financing can have different forms (public loans or grants, regional taxes, management fees, sale of services) but direct contributions remain most common. Sometimes Parties provide in-kind contributions such as technical assistance, the provision of buildings, office space or staff.[112] Costs may be allocated simply on an "equal share" basis, or different formula may be introduced to determine the contribution from each Party. These formulas may consider the geographic area of the basin, the populations dependent on it and the gross domestic product (GDP) of the States who are Parties to the joint body, as well as the specific benefits received from joint activities.

- **Alternative sources of funding, particularly from the private sector, international banks and cooperation agencies can contribute to the implementation of joint bodies' specific functions.**

The manner in which these funds are to be secured might be included within the arrangement to ensure transparency. Article 24 of the Dniester Treaty, for example, states that financing shall be provided on the basis of Party contributions (based on their capacities), whilst also aiming to attract resources from bilateral and multilateral sources and financial vehicles, including grants and loans, and the use of innovative methods and incentives for attracting and channeling resources.

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[112] UNECE, *Background Study on Funding and Financing of Transboundary Water Cooperation and Basin Development*, 2020, https://unece.org/fileadmin/DAM/env/documents/2020/WATER/12Dec_16-17_Virtual_workshop_on_financing_transboundary_water_cooperation_and_basin_development/UNECE_background_study_Final_Draft_November_2020_clean_final_draft_01_12_2020.pdf , p. 55.

How can financing provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 42: Zambezi Agreement, 2004

Zambezi Agreement, 2004

Article 19: Financial provisions

1. The budget of the Commission shall be drawn from annual cash contributions by Member States; donations, grants and loans from bilateral and multilateral organizations, monies raised internally; and other sources of funding agreed to by the Council.
2. The contributions of Member States to the ordinary budget of the Commissions shall be determined by the Council.
3. Unless specified by the Council, contributions by Member States to projects implemented by the Commission could either be in cash or in kind; In kind contributions include: staff time, experts, training facilities, services, office accommodation and equipment or any other contributions as may be agreed by Council from time to time.

Other examples: Agreement for Establishment of the Binational Commission for the Integrated Water Resources Management of the Transboundary Basins shared between Ecuador and Peru, 2017, Art. 12; Dniester Treaty, 2012, Art. 24; and the Itaipu Treaty signed by Brazil and Paraguay, 1973, Art. 8.

Supporting resources (*non-exhaustive*)

- UNECE, *Financing and Funding of Transboundary Water Cooperation and Basin Development*, 2021, https://unece.org/environment-policy/water/areas-work-convention/financing-transboundary-water-cooperation.
- SDC, UNCDF, GWH, *Blue Peace, Invest in Peace through Water,* 2019, https://www.uncdf.org/article/4670/blue-peace---invest-in-peace-through-water.
- World Bank, *Promoting Development in Shared River Basins. Case Studies from International Experience*, 2018, https://openknowledge.worldbank.org/bitstream/handle/10986/29449/W17105.pdf?sequence=4&is%20Allowed.

Elephants on the Chobe river, Chobe National Park, Botswana

Module 5 - Implementation, institutional framework and dispute settlement

Building block: Compliance monitoring

Key aspects:

- **Monitoring implementation of the agreement (e.g., obligation of reporting, monitoring compliance, compliance review).**

International water experts often assess the effects of an arrangement on transboundary waters in terms of the extent to which States comply with its commitments. The concept known by the Latin formula *pacta sunt servanda* ("agreements must be kept") is arguably the oldest principle of international law. Without such a rule, no international agreement would be binding or enforceable. Full compliance is said to lead States into a pattern of obedience and predictable behavior. Therefore, conflict on water utilization mainly arises when States fail to comply with their commitments.

What to consider when drafting provision on compliance and monitoring

- **Arrangements should clearly set out the commitments to be implemented at national and transboundary levels.**

Any legal arrangement should set out clear requirements for its Parties in terms of the commitments that operate at a transboundary level, and the obligations that the Parties must comply with at the national level, such as establishing the necessary laws, regulations and administrative procedures. While some flexibility or ambiguity may be embedded into an arrangement in order to achieve consensus, clarity in the commitments adopted is essential for monitoring compliance.

- **Compliance may include commitments to report, assess and address incidences of non-compliance.**

Joint bodies established under an arrangement can play a key role in relation to compliance and implementation. Due to State sovereignty concerns, the power of joint bodies is often limited to a coordinating function, sometimes operational powers and very rarely regulatory or judicial functions. However, joint bodies can play a role in terms of monitoring compliance. For instance, an arrangement may oblige States to submit periodic reports on progress in implementing the arrangement to the joint body. It may also have a role in reviewing these periodic reports and assessing the current implementation status of the arrangement. In more limited incidences, a joint body may play a role in addressing non-compliance through, for example, the provision of financial or technical assistance.

How compliance and monitoring provisions could be framed? Examples from treaty practice *(non-exhaustive)*

Box 43: Great Lakes Agreement, 2012

Great Lakes Agreement, 2012

Article 5 – Consultation, Management and Review

[. . .]

2(e) the Parties shall prepare, in consultation with the Great Lakes Executive Committee, a binational Progress Report of the Parties to document actions relating to this Agreement, taken domestically and binationally. The first such report shall be provided to the Public and the Commission before the second Great Lakes Public Forum, and subsequent reports shall be provided before each subsequent Great Lakes Public Forum.

Article 7 – International Joint Commission

The Parties agree that, pursuant to Article IX of the Boundary Waters Treaty, the Commission shall have the following responsibilities: … (k) providing to the Parties, in consultation with the Boards established under Article 8, a triennial 'Assessment of Progress Report' that includes: (i) a review of the Progress Report of the Parties; (ii) a summary of Public input on the Progress Report of the Parties; (iii) an assessment of the extent to which programs and other measures are achieving the General and Specific Objectives of this Agreement; (iv) consideration of the most recent State of the Lakes Report; and (v) other advice and recommendations, as appropriate.

Article 5 (4)

The Parties shall review each Assessment of Progress Report prepared by the Commission in accordance with Article 7(1)(k), and consult with each other on the recommendations contained in the reports, and consider such action as may be appropriate. The Parties may transmit any commitments to the Commission within six months of receipt of the Assessment of Progress Report.

Article 5 (5)

Following every third triennial Assessment of Progress Report of the Commission, the Parties shall review the operation and effectiveness of this Agreement. The Parties shall determine the scope and nature of the review taking into account the views of State and Provincial Governments, Tribal Governments, First Nations, Métis, Municipal Governments, watershed management agencies, other local public agencies, downstream jurisdictions, and the Public.

Other examples: Sava Agreement, 2002, Art. 21; and the Lake Tanganyika Convention, 2003, Art. 22.

Supporting resources (*non-exhaustive*)

- UNECE, *Water management: Guidance on public participant and compliance with agreements*, 2000, https://unece.org/DAM/env/water/publications/documents/guidance.pdf .
- Mager, U., *International Water Law: Global Developments and Regional Examples*, 2015, https://www.jura.uni-heidelberg.de/md/jura/mat/band_3_international_water_law.pdf.
- Tanzi, A., *The Economic Commission for Europe Water Convention and the United Nations Watercourses Convention – An analysis of the harmonised contribution to international water law,* 2015, pp. 71-74.

Module 5 - Implementation, institutional framework and dispute settlement

Building block: Dispute settlement

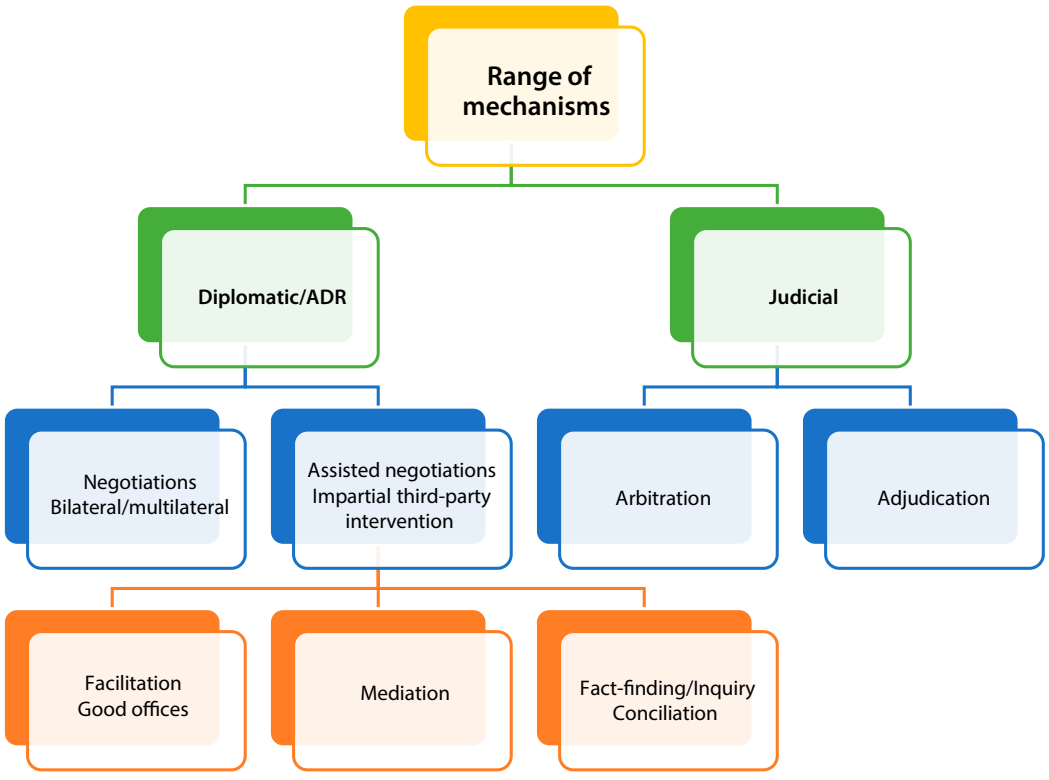
Key aspects:

- Dispute prevention (e.g., through a joint body, recourse to the Water Convention Implementation Committee)
- Avenues for dispute settlement (e.g., through joint bodies, negotiation, mediation, good offices, arbitration, impartial fact-finding, ICJ)

Under international law, States have the obligation to settle their disputes in a peaceful manner, including those on transboundary waters.[113] States and Parties involved in managing transboundary waters will invariably encounter conflicting goals and practices. When a dispute crosses an international boundary, resolving it can be more difficult as each State may have different interests, or may have differing interpretations of their commitments under an arrangement. They may also want to resort to different means by which to resolve a dispute.

Conflict exists on a spectrum of avoidance to escalation. Avoidance can be a strategy to avoid a conflict or, alternately, may represent a conflict that has reached an impasse in negotiations in which conflicting Parties avoid discussing the conflict entirely. Avoidance can also be a strategy for a more powerful actor, who might benefit from the status quo. Opposite to avoidance is escalation, or the increased intensity of the dispute. In between these two extreme strategies are a host of approaches, from legal to technical to diplomatic to unofficial (see Figure 2). The appropriate intervention will vary depending on the status of the conflict, although it is generally more efficient to prevent disputes than to resolve them after the fact.

Figure 2: Range of mechanisms for dispute settlement



Source: Zaki Shubber, IHE Delft

[113] Charter of the United Nations (Art. 33).

The 1992 Water Convention and the 1997 Watercourses Convention and establish frameworks where general principles and prescriptive obligations related to the settlement of disputes between States are set out.

The provision of dispute settlement mechanisms in water treaties has become increasingly common over the years, rising from 31 per cent of agreements signed before 1950 to 44 per cent of agreements signed after 1950. Since 1990, 61 per cent of agreements have incorporated some sort of dispute settlement mechanisms, including five different methods for conflict resolution: the use of diplomatic channels (39 per cent); arbitration (32 per cent); the creation of special commissions for conflict resolution (28 per cent); the agreement to submit a dispute to an existing permanent judicial organ (8 per cent), such as the ICJ; and third-party involvement (e.g., a donor or mediator) (6 per cent).[114]

What to consider when drafting provisions on dispute settlement

- **States have at their disposal several ways to peacefully settle water disputes.**

Riparians often include in arrangements on transboundary waters specific clauses on dispute settlement. The means by which to settle water disputes may be diplomatic or judicial. While in the first case, the result is not binding on the Parties, in the second case the Parties in question commit to comply with the third-party decision.

Dispute settlement mechanisms include negotiations to be carried out in good faith. Riparians may also jointly seek the good offices of, or request mediation or conciliation by, a third party. Riparians may also make use, as appropriate, of any joint watercourse institutions that they may have established. States may also agree to submit the dispute to arbitration or to the ICJ.

- **States may include provisions that establish a process to settle water disputes.**

Often, States opt to establish more than one step in the respective dispute settlement mechanism, structuring the processes from bilateral negotiation between disputing Parties, possibly facilitated by the joint body, followed by a possible engagement of external actors, through mediation, arbitration or adjudication. These steps are progressive and most arrangements require the States to exhaust alternative dispute resolution mechanisms before adopting a more adversarial adjudicative option.

- **Monitoring and compliance mechanisms may be included in arrangement. These mechanisms help to resolve disputes in advance.**

Including provisions related to compliance monitoring can offer an important means by which to identify potential incidents of non-compliance with an existing agreement. These mechanisms rely on transparent and collaborative approaches and can avoid invoking formal, adversarial dispute settlement mechanisms.

- **The establishment of fact-finding commissions may be a useful tool to prevent the resort to judicial means to solve a water dispute.**

In case of disagreement on the application and interpretation of an arrangement on transboundary waters, Parties may decide to set up a fact-finding mechanism. For instance, the 1997 Watercourses Convention provides for this option. The fact-finding commission is composed of one member nominated by each party concerned and a member not having the nationality of any of the Parties concerned (Art. 33(4)). The Parties can decide to include the duty to provide to the commission necessary information. They may also give the right to the Commission to have access to their territory and to inspect any facilities, plant, equipment, construction, or natural feature relevant for the purpose of its inquiry (Art. 33(7)). The report of the Commission is not binding upon the Parties, but they must take it into consideration in good faith. A similar role can be played by the Implementation Committee established under the 1992 Water

[114] Giordano, M., *et al.*, "A review of the evolution and state of transboundary freshwater treaties", *International Environmental Agreements: Politics, law and economics*, vol.14, 2013.

Convention, which is described as a "simple, non-confrontational, non-adversarial, transparent, supportive and cooperative" mechanism.[115]

How can dispute settlement provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 44: Treaty between the Government of India and Government of Pakistan Concerning the Most Complete Satisfactory Utilisation of the Waters of the Indus System of Rivers, 1960

Treaty between the Government of India and Government of Pakistan Concerning the Most Complete Satisfactory Utilisation of the Waters of the Indus System of Rivers, 1960 ("Indus Waters Treaty, 1960")

Article IX: Settlement of differences and disputes

(1) Any question which arises between the Parties concerning the interpretation or application of this Treaty or the existence of any fact which, if established, might constitute a breach of this Treaty shall first be examined by the Commission, which will endeavour to resolve the question by agreement.

(2) If the Commission does not reach agreement on any of the questions mentioned in Paragraph (1), then a difference will be deemed to have arisen, which shall be dealt with as follows:

(a) Any difference which, in the opinion of either Commissioner, falls within the provisions of Part I of Annexure F shall, at the request of either Commissioner, be dealt with by a Neutral Expert in accordance with the provisions of Part 2 of Annexure F;

[. . .]

(4) Either Government may, following receipt of the report referred to in Paragraph (3), or if it comes to the conclusion that this report is being unduly delayed in the Commission, invite the other Government to resolve the dispute by agreement. In doing so it shall state the names of its negotiators and their readiness to meet with the negotiators to be appointed by the other Government at a time and place to be indicated by the other Government. To assist in these negotiations, the two Governments may agree to enlist the services of one or more mediators acceptable to them.

(5) A court of Arbitration shall be established to resolve the dispute in the manner provided by Annexure G

a) upon agreement between the Parties to do so; or

b) at the request of either Party, if, after negotiations have begun pursuant to Paragraph (4), in its opinion the dispute is not likely to be resolved by negotiation or mediation;

c) at the request of either Party, if, after the expiry of one month following receipt by the other Government of the invitation referred to in Paragraph (4) that Party comes to the conclusion that the other Government is unduly delaying the negotiations.

Other Examples: Agreement between Finland and Sweden Concerning Transboundary Rivers, 2009, Art. 30; and the Zambezi Agreement, 2004, Art. 21.

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp. 234-257.
- UNECE, *Guide to Implementing the Water Convention*, 2013, pp. 98-100.
- Tanzi, A., *The Economic Commission for Europe Water Convention and the United Nations Watercourses Convention – An analysis of the harmonised contribution to international water law,* 2015, pp. 71-74.
- Tanzi, A., "Diplomacy, responsibility and accountability in transboundary water disputes", in Tignino, M. and Bréthaut, C. (eds.), *Research Handbook on Freshwater Law and International Relations* (Edward Elgar, 2019), pp. 197-214.

[115] See UNECE, *Decision VI/1, Support to implementation and compliance*, https://unece.org/sites/default/files/2021-05/DECISION%20VI-1ece.mp_.wat_.37.add_.2_eng.pdf .

Rio Grande Gorge bridge over Rio Grande in Taos, USA on the border with Mexico

Module 6 – Final Provisions

Building block: States and/or entities that can become Parties to the agreement or other arrangement

Key aspect: stipulate who can become party to an arrangement

One of the issues which arises during the negotiation of an arrangement is who may become a Party to it.[116] Agreements or other arrangements on transboundary waters are typically negotiated and concluded among the States of a particular river basin or sub-basin or aquifer system. In some cases, not all States sharing the basin, sub-basin or aquifer system participate in the negotiations, or not all States subsequently adopt the arrangement. In this case, States sharing part of the basin, sub-basin or aquifer that initially did not participated in the negotiations or did not adopt the arrangement, may want to join the arrangement at a later date.

What to consider when drafting a provision related to the Parties of an agreement or an arrangement

- **In principle, all States affected by the arrangement should have the opportunity to negotiate the arrangement and become a Party to it.**

Based on the community of interest of a particular river basin, sub-basin or aquifer system, all States sharing the relevant part of basin, sub-basin or aquifer system should be entitled to participate in the negotiation of an arrangement. In the context of their duty to cooperate, States must pursue negotiations in good faith with a view to achieving a mutually satisfactory arrangement.[117] In this regard, Article 4(1) of the 1997 Watercourses Convention provides that: "[e]very watercourse State is entitled to participate in the negotiation of and to become a party to any watercourse agreement that applies to the entire international watercourse, as well as to participate in any relevant consultations".

- **Regional or other international organizations, local authorities and NGOs may also participate in the negotiations and/or the implementation of an agreement.**

Regional and international organizations as well as local authorities and NGOs may participate in the negotiation and implementation of an arrangement on transboundary waters. The States sharing a particular basin, sub-basin or aquifer system may choose to include these actors in the development of such an arrangement. These actors may include:

- Regional-integration organizations to which their member States have transferred competence over matters governed by the arrangement, as is the case with the EU (see for example, the Agreement on the Protection and Sustainable Development of the Prespa Park Area, 2010, concluded between the Ministries of the Environment of Albania, Greece, North Macedonia and the EU);
- Sub-national authorities endowed with the competence to conclude such arrangements (see for example, the Convention on the Protection, Utilization, Recharge and Monitoring of Franco-Swiss Genevese Aquifer, 2007, concluded between the Community of the Annemasse Region, the Community of the Genevese Communes and the Commune of Viry, France, on the one hand, and the Republic and Canton of Geneva, on the other);
- Other entities that have a substantive role in the implementation or enforcement of the arrangement. For example, the World Bank participates in the dispute settlement procedure of the Indus Waters

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[116] On the modalities of joining an arrangement, see below building block entry into force.

[117] Paragraph 6 of article 2 and paragraph 1 of article 9 of the 1992 Water Convention provide for cooperation and conclusion of agreements between the Riparian Parties on the basis of equality and reciprocity, which implies the right, as well the duty, for each Riparian State to cooperate with other Riparian States.

Treaty, 1960. When an agreement is not reached between the Parties, the World Bank may appoint a Neutral Expert (see Annex F) or the Chairman of the Arbitral Tribunal, as envisaged in accordance with Annex G; and

- Other stakeholders with an active interest in the preservation and use of the transboundary waters in question (see for example the Joint Effort Local Agreement on the Protection of the Chiquibul-Mopan-Macal and Belize Watersheds through a Joint Coordination between Belize and Guatemalan Community Leaders, 2013 which has been signed not only by local authorities but also by NGOs involved in the sustainable management and protection of the relevant catchment areas, such as the Friends for Cooperation and Development).

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 45: Lake Tanganyika Convention, 2003

Lake Tanganyika Convention, 2003

Article 40: Ratification, acceptance, approval or accession

1.This Convention and any protocol shall be open for accession by riparian States and any other State whose territories are part of the Lake Tanganyika Basin, from the date on which this Convention or the protocol has entered into force. The instruments of accession shall be deposited with the Depositary.

Other examples: Indus Waters Treaty, 1960; the 2013 Joint Effort Local Agreement on the Protection of the Chiquibul-Mopan-Macal and Belize Watershed, 2013; and International Agreement on the Meuse, 2001.

Supporting resources (*non-exhaustive*)

- ILC, *Draft articles on the law of the non-navigational uses of international watercourses and commentaries thereto*, 1994, https://legal.un.org/ilc/texts/instruments/english/commentaries/8_3_1994.pdf, p. 95.
- UNECE, *Guide to Implementing the Water Convention*, 2013, paras. 146-147.
- UNECE, *Principles for Effective Joint Bodies for Transboundary Water Cooperation*, 2018, p. 8.

View on the Sava River in Mužilovčica, Croatia

Module 6 – Final provisions

Building block: Relationship with other agreements, rights and obligations

Key aspect: accounting for existing and future arrangements

Subject to Article 103 of the Charter of the United Nations, [118] States are at liberty to decide on the relationship between successive treaties, and if nothing is provided in an arrangement on this particular issue, Article 30 of the Vienna Convention, 1969, governs the matter. The Vienna Convention provides that a subsequent treaty generally prevails over an earlier treaty (Arts. 30 (3) and 59 (1)) except when the treaty itself stipulates that it is subject to a previous or subsequent treaty or that it should not be deemed as incompatible with the other treaty (Art. 30 (2)). According to this provision, if a treaty provides that it is subject to another treaty, the other treaty has precedence. If not, then the latter treaty has precedence over the former. If some of the Parties to the earlier treaty are not Parties to the latter treaty, or vice-versa, the treaty to which both Parties are party to governs the relationship.

Points to consider when drafting a provision on existing and future arrangements

- **Make explicit reference to the relationship between existing or future arrangements.**

When drafting a new arrangement, Parties often introduce a "saving" or "compatibility" clause to address rights and obligations emanating from existing treaties or even potential relations with future treaties.[119] For example, Article 3 of the 1997 Watercourses Convention points out that, "[i]n the absence of an agreement to the contrary, nothing in the present Convention shall affect the rights or obligations of a watercourse State arising from agreements in force for it on the date on which it became a party to the present Convention". The 1997 Watercourses Convention goes on to suggest that States may, "where necessary, consider harmonizing such agreements with the basic principles of the present Convention". In the 1992 Water Convention, Article 9(2) requires the Parties to adapt existing agreements, "where necessary to eliminate the contradictions with the basic principles of this Convention". The reference to basic principles clearly means that States do not have to revise existing agreements in their entirety to reflect every single provision of the convention.[120] In terms of future arrangements, the 1992 Water Convention requires the Parties to enter into agreements or other arrangements that apply the general obligations of prevention, control and reduction of transboundary impact to the specific circumstances pertaining to a given watercourse.[121] Within some contexts, the Parties may decide to explicitly state that a new arrangement supersedes existing arrangements, either partially or fully (see Danube Convention, 1994, Box 46).

- **A provision on cooperation with existing legal and institutional frameworks can increase the effective implementation of linked arrangements.**

Whenever the rights and duties of the Parties to an arrangement are clear and consistent with other international law obligations of a Party, the potential for a good record of compliance increases. For example, the Sava Agreement, 2002, explicitly refers to the EU Water Framework Directive and cooperation with joint bodies and other organizations such as the Danube Commission, ICDPR, UNECE and EU institutions (Arts. 3 and 5).[122] These arrangements and institutions, while operating at different levels, can be seen as mutually reinforcing in terms of supporting the implementation of the Sava Agreement, 2002.

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[118] Article 103 reads, "[i]n the event of a conflict between the obligations of the members of the United Nations under the present Charter and their obligations under any other international agreement, their obligations under the present Charter shall prevail".

[119] This is derived from the Vienna Convention, 1969; see in particular, the application of successive treaties relating to the same subject matter (Art. 30), and the termination or suspension of the operation of a treaty implied by the conclusion of a later treaty (Art. 50).

[120] UNECE, *Guide to Implementing the Water Convention,* no. 3, para. 241.

[121] 1992 Water Convention, Art. 9(1).

[122] EU Water Framework Directive, no. 41.

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 46: Danube Convention, 1994

Danube Convention, 1994

Article 21: Existing and supplementary agreements

The Contracting Parties on the basis of equality and reciprocity shall adapt existing bilateral or multilateral agreements or other arrangements, where necessary to eliminate contradictions with basic principles of this Convention and shall enter into supplementary agreements or other arrangements where appropriate.

Other examples: Indus Waters Treaty, 1960, Art. XI; and the Albufeira Convention, 1998, Art. 27.

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp. 89-90.
- UNECE, *Guide to Implementing the Water Convention*, 2013, p. 64.
- Tanzi, A., *The Economic Commission for Europe Water Convention and the United Nations Watercourses Convention – An analysis of the harmonised contribution to international water law,* 2015, https://unece.org/DAM/env/water/publications/WAT_Comparing_two_UN_Conventions/ece_mp.wat_42_eng_web.pdf.

Industrial sewage treatment plant near Rhine river, Koblenz, Germany

Module 6 – Final provisions

Building block: Amendments and supplementary instruments

As time passes, arrangements on transboundary waters may operate in a context different from the one in which the Parties initially drafted them. Arrangements therefore have to adapt to a changing environment through flexible and purpose-oriented interpretation, and informal or formal modification. The Parties to an arrangement usually seek to preserve it in a manner which conforms to present-day exigencies by adopting supplementary arrangements, or through the adoption of instruments within the relevant joint body. Minutes, decisions or guidelines of the latter may allow the Parties to take into account novel trends or to allow for interpretation of the arrangement in light of changing circumstances without the need for costly and often time-consuming formal amendments to an arrangements provision.

What to consider when drafting provisions on amendments and supplementary instruments

- **Some arrangements for transboundary water cooperation assign to the joint body, besides its specific tasks, the function of developing further instruments.**

Providing a joint body with the flexibility to develop subsequent instruments, such as protocols or guidelines, is an effective way to deal with changing circumstances. Article 18(1) of the Danube Convention, 1994, for example, provides a mandate for the ICPDR to elaborate, "proposals and recommendations addressed to the Contracting Parties". Similarly, a function of the Lake Victoria Basin Commission is, pursuant to Article 33 (3) of the Lake Victoria Protocol, 2003, to provide "guidance on implementation of sectoral projects and programmes".

- **The formal conclusion of supplementary instruments by the Parties, complementing the initial one, is also a tool allowing for the adaptation of the latter.**

Arrangements may provide a provision that sets out the right of Parties to develop supplementary instruments. For example, under the Sava Agreement, 2002 (Art. 30), the Parties commit to developing a defined set of protocols for regulating protection against flood, excessive groundwater, erosion, ice hazards, drought and water shortages; water use/ utilization; exploitation of stone, sand, gravel and clay; protection and improvement of water quality and quantity; protection of aquatic ecosystems; prevention of water pollution caused by navigation; and, emergency situations. Additionally, the Parties, "agree to conclude other protocols necessary for the implementation of this Agreement" (Art. 30). A slightly different approach taken by the Treaty between the United States of America and Mexico relating to the waters of the Colorado and Tijuana Rivers, and the Rio Grande (Rio Bravo) from Fort Quitman, Texas, to the Gulf of Mexico, 1944 (the "US-Mexico Treaty, 1944") is to adopt "minutes" at meetings of the bilateral commission as supplementary instruments to the treaty (Art. 25).

- **Notwithstanding the above means of adapting an arrangement, the Parties to it may consider it necessary, at a certain point, to proceed with its amendment.**

The relevant provisions of the Vienna Convention, 1969, while providing useful normative guidance on the matter, are residual rules, giving way to the amendment procedure chosen by the Parties to a treaty. Many international arrangements specify their own procedures for amendment and the relevant practice varies considerably. However, two steps are usually required: the adoption of the amendment by the Parties to the arrangement, and its subsequent entry into force; the latter is triggered by the formal consent by all or a specified number of the Parties to it. However, this does not exclude the possibility that an amendment takes effect once adopted, in particular in case of arrangements which have entered into force upon signature, as is case with the Mekong River Agreement, 1995 (Arts. 36 and 37).

The formal consent of each Party for the entry into force of an amendment following its adoption may be expressed in the form required for the entry into force of the initial agreement (i.e., ratification, acceptance

or approval). Simplified procedures (such as tacit acceptance following the absence of objection within a certain period after the adoption of the amendment) may be followed for the amendment of technical annexes. In the case of bilateral arrangements, unanimity of the two Parties is required for the entry into force of an amendment, while in case of multilateral treaties State practice provides a variety of options, such as unanimity or qualified majority.

The integrated approach to the use and protection of transboundary waters suggests that the unanimity rule for the entry into force of amendments is most appropriate. Otherwise, a differentiated treaty regime might apply within a basin, with some States being bound, once the amendment has entered into force, by the agreement as amended while some will continue to be bound by the non-amended version. Unanimity may, however, not be the option chosen where there are a considerable number of Parties, such as the Danube Convention, 1994 or the Convention on the establishment of the Niger Basin Authority, 1987. In such cases, qualified majority has been retained instead of unanimity, as the absence of consent to be bound by the amendment by just one Party would block the evolution of the treaty regime.

- **The evolution of international water law may prompt the Parties to an arrangement to proceed with its amendment.**

Changes and novel trends in international water law are usually taken into account by the Parties to an arrangement through an evolutive interpretation of its provisions, often reflected in the text of minutes, recommendations and action plans produced by the relevant joint body. However, the quest for legal certainty may prompt the Parties to provide for the adaptation of existing arrangements concluded between some of them for the elimination of contradictions between the latter and the former (see for example Danube Convention, 1994, Art. 21).

How could provisions be framed? Examples from treaty practice (*non-exhaustive*)

Box 47: Indus Waters Treaty, 1960

Indus Waters Treaty, 1960

Article XII – Final Provisions

[. . .]

(3) The provisions of this Treaty may from time to time be modified by a duly ratified treaty concluded for that purpose between the two Governments.

(4) The provisions of this Treaty, or the provisions of this Treaty as modified under the provisions of Paragraph (3), shall continue in force until terminated by a duly ratified treaty concluded for that purpose between the two Governments.

Other examples: Revised Convention Creating the Niger Basin Authority, 1987, Art. 17; and US-Mexico Treaty, 1944, Art. 25.

Supporting resources (*non-exhaustive*)

- United Nations, *Final Clauses of Multilateral Treaties Handbook,* 2003, https://treaties.un.org/pages/Resource.aspx?path=Publication/FC/Page1_en.xml., pp. 95-107.
- UNECE, *Water and Climate Change Adaptation in Transboundary Basins: Lessons Learned and Good Practices,* 2015, pp. 22-28.
- International Law Commission, *Draft conclusions on subsequent agreements and subsequent practice in relation to the interpretation of treaties,* 2018, https://legal.un.org/ilc/reports/2018/english/a_73_10_advance.pdf, pp. 12-16.

Module 6 – Final provisions

Building block: Entry into force

An agreement or other arrangement usually includes a provision concerning its entry into force, which triggers its coming into legal effect at both domestic and international levels. Depending on what is provided in a particular arrangement, the signature of an agreement or other arrangement alone may not be sufficient to make it binding upon a Party. In some instance, a formal consent to be bound through the process of ratification, accession, acceptance, or approval may also be required.[123] However, according to Article 18 of the Vienna Convention, 1969, a State that has signed an arrangement should, at a minimum, not act in a manner that defeats the object and purpose of the arrangement.

What to consider when drafting provisions related to entry into force

- **A treaty may include provisions on its depositary and registration.**

These provisions act as part of the process for entry into force. Although registration is not mandatory, it is a useful process as it acts as a means to provide public information on the obligations undertaken by States. The Charter of the United Nations provides that "every treaty and every international agreement entered into by any member of the United Nations after the present Charter comes into force shall as soon as possible be registered with the Secretariat and published by it" (Art. 102). Some arrangements provide for the registration or deposit of an arrangement with a specific Party, or a regional or international organization. For example, in the case of the Rhine Convention, 1999, Switzerland acts as the depositary of the Convention. It receives the notification from each Party that the national procedures for consenting to be bound by the Convention have been exhausted, and Switzerland then informs the other contracting Parties thereof (Art.17).

- **An agreement or other arrangement is only binding if it has entered into force.**

Procedures for entry into force usually commence when the agreement or other arrangement is first signed by either all Parties, or a requisite number of Parties who negotiated it. It will enter into force dependent on times and processes set out by the Parties during the negotiations phase. These processes are two-pronged: the actions by the States and an event. Actions of the States are in the form of formal consent to be bound by the arrangement, e.g. through signature, ratification, accession, acceptance or approval. The event required is the culmination of the number of Stats that have submitted formal consent to be bound by the arrangement, and a time requirement. In instances where such provisions are not clearly provided, an arrangement enters into force as soon as consent to be bound by it has been established for all the Parties participating in the negotiations (Vienna Convention, 1969, Art. 24 (1)(2)).

In the case of a multilateral treaty, it may enter into force, depending on its final provisions, soon after the States sign it, or lodge the appropriate instrument of ratification, accession, acceptance, or approval. In cases where there are only two Parties to an arrangement, they may agree that the mutual notification of the completion of the relevant internal procedures trigger its entry into force. An arrangement, either bilateral or multilateral, enters into force upon signature when the arrangement provides that signature shall have such an effect. Signatories on behalf of States may be ministers, diplomats, or departmental heads with appropriate full powers.

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[123] "Ratification" concerns the international act whereby a State indicates, usually following signature, its consent to be bound by a treaty (Vienna Convention, 1969, Arts (1)(b), 14(1) and 16). "Acceptance" or "Approval" has the same effect as ratification, ie., evidencing a formal consent to be bound (Vienna Convention, 1969, Arts. 2(1)(b) and 14(2)). Certain states adopt a practice of acceptance or approval, instead of ratification, as their constitutional law does not require the arrangement in question to be ratified by the head of state. "Accession" is an act whereby a State accepts to be bound by an arrangement usually already negotiated and/or where the period for signature has closed (Vienna Convention, 1969, Arts. 2(1)(b) and 15).

- **Some arrangements may indicate that pending their entry into force some provisions, or the entire instrument, may provisionally be in force.**

Provisional application can occur where the arrangement itself expressly provides this. Such provisional application provisions can however be terminated with respect to a State if that State notifies the other States between which the arrangement is being applied provisionally of its intention not to become a Party to it (Vienna Convention, 1969, Art. 25).

How could provisions for entry into force be framed? Examples from treaty practice (*non-exhaustive*)

Box 48: Treaty between Nepal and India Concerning the Integrated Development of the Mahakali River, 1996

Treaty between Nepal and India Concerning the Integrated Development of the Mahakali River, 1996

Article 12

[. . .]

3. This Treaty shall be subject to ratification and shall enter into force on the date of exchange of instruments of ratification. It shall remain valid for a period of seventy five (75) years from the date of its entry into force.

Other examples: Convention on the status of the Volta River and the Establishment of Volta Basin Authority, 2007, Arts. 19-20; Zambezi Agreement, 2004, Art. 26; and, Sava Agreement, 2002, Art. 28; Mekong Agreement, 1995, Art. 36.

Supporting resources (*non-exhaustive*)

- Rieu-Clarke, A., Moynihan, R. and Magsig, B-O., *UN Watercourses Convention: User's Guide*, 2012, pp. 263-268.
- Aust, A., "Article 24 (Entry into force)", in Corten, O. and Klein, P. (eds.), *The Vienna Conventions on the Law of Treaties. A commentary* (Oxford University Press, 2011), pp. 628-637.
- Aust, A., *Handbook of International Law* (Cambridge University Press, 2010), p. 73.
- United Nations, *Final Clauses of Multilateral Treaties Handbook,* 2003.

Module 6 – Final provisions

Building block: Withdrawal and termination

The principle of *pacta sunt servanda,* which stipulates that agreements or other arrangements must be kept, is a fundamental feature of all legal systems, including international law (Vienna Convention, 1969, Art. 26). Without such a principle, legal instruments would fail to have any binding force on Parties. In order to protect the sanctity of the principle, legal arrangements often provide provisions that stipulate clearly how States might withdraw from or terminate that arrangement. Withdrawal concerns the act whereby a Party to an arrangement seeks to no longer be legally bound by that arrangement, whereas termination relates to the situation whereby the arrangement is no longer legally binding on all its Parties.

What to consider when drafting provision on withdrawal and termination?

- **Termination may be triggered in a number of ways.**

Some arrangements may run for a certain period of time, and then renew automatically. The Albufeira Convention, 1998, for example, stipulates that, "this Convention shall be valid for a period of seven years and may be prolonged automatically by periods of three years" (Art.33). If the termination clause is not triggered, the Convention will run for successive periods. Other arrangements simply provide that the arrangement runs for an indefinite period.[124] Another approach is seen in the case of the Columbia Treaty, 1960, wherein Canada or the United States have a right to terminate the treaty after it has been in force for 60 years, provided that either Party has given at least 10 years written notice (Art. XIX).

- **An arrangement may provide different approaches to withdrawal.**

An arrangement may explicitly set out the conditions upon which a Party can withdraw from it. For example, the Danube Convention, 1994, stipulates that "at any time after five years from the date on which this Convention has come into force with respect to a Party, that Party may withdraw from this Convention by written notification" (Art. 29). Withdrawal then becomes effective one year from the date of notification. An alternative approach can be seen by the Sava Agreement, 2002, which does not include the five-year threshold period. A Party may withdraw from the Sava Agreement at any time, "by giving written notice to the Depository of this Agreement, who shall immediately communicate to the Parties" (Art. 31). Withdrawal then takes effect, "one year after the date of its receipt by the Depositary unless notice is withdrawn beforehand or the Parties mutually agree otherwise" (Art. 31).

- **Provisions on withdrawal and termination may depend on the nature of the arrangement.**

The type of arrangement will likely shape the type of provisions that are included in relation to withdrawal and termination. Where an arrangement relates to a specific project, such as the construction of a hydropower plant on a transboundary river, fixed terms might be used for termination. Similarly, it might be particularly costly for a Party to withdraw from such an arrangement, given that the project is likely to require joint investment by the Parties. Withdrawal conditions might therefore be stricter for project-related arrangements than for broader framework arrangements.

- **Withdrawal thresholds are important to stipulate in order to maintain the sanctity of the arrangement.**

A common feature of the provisions cited above is that they require that a Party planning to withdraw from an arrangement must provide sufficient notice of its intention. An absence of such a requirement, would mean that Parties might withdraw from an arrangement when their short-term interests run contrary to the commitments contained in the arrangement. The provision of timelines and restrictions on withdrawal may also force the Parties to consider resolving any issues that are underlying the withdrawal request.

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[124] See, for example, the Sava Agreement, 2002, Art. 28.

How could provisions be framed? Examples from treaty practice *(non-exhaustive)*

Box 49: Treaty of the River Plate Basin, 1969

Treaty of the River Plate Basin, 1969

Article VII

This Treaty shall be known as the Treaty of the River Plate Basin and shall remain in force for an indefinite period.

[. . .]

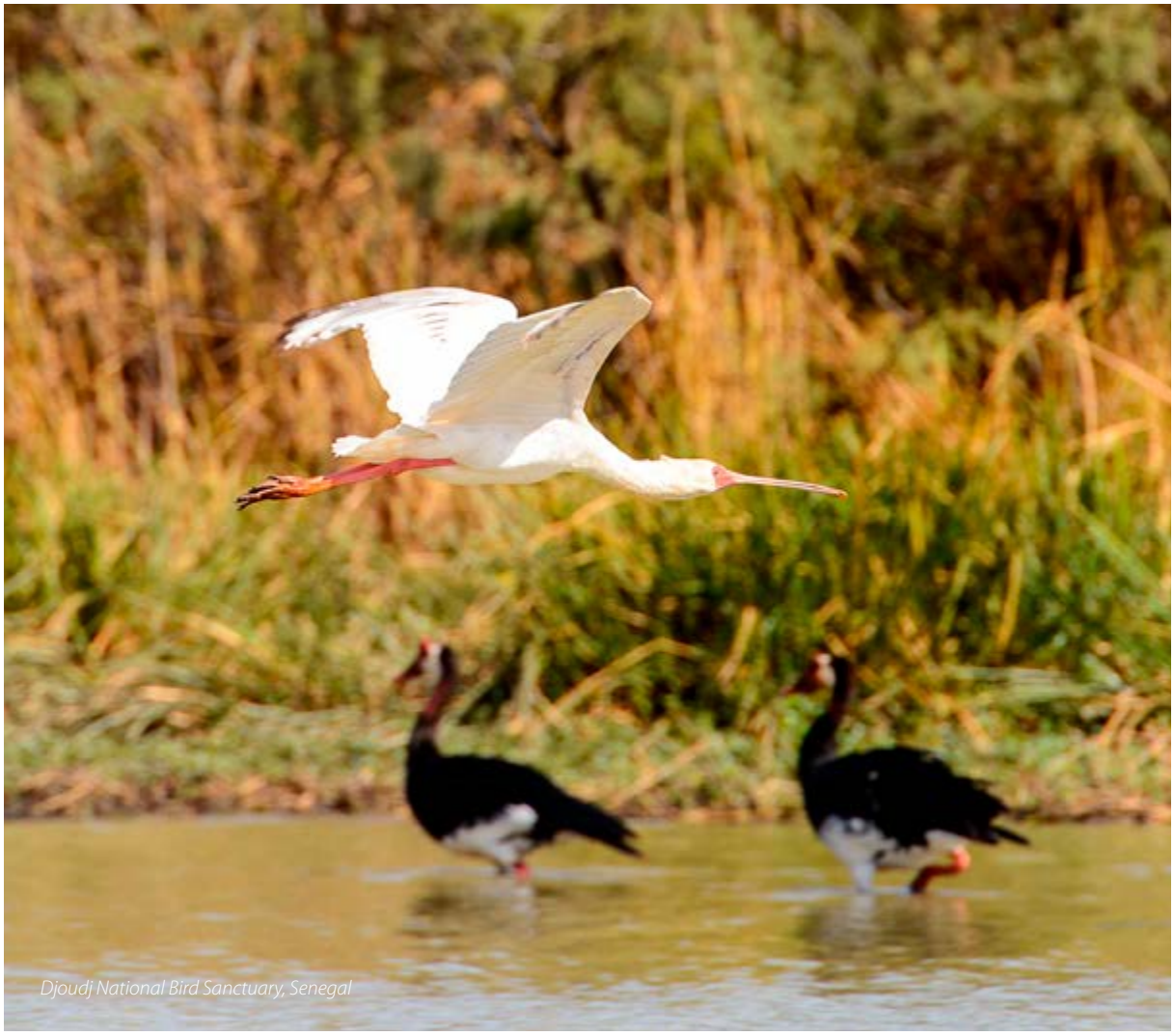
Article VIII (3)

A Contracting party shall notify the other Contracting Parties of its intention to denounce this Treaty at least 90 days before it formally transmits its instrument of denunciation to the Government of the Federative Republic of Brazil. Once the Treaty has been formally denounced, it shall cease to have effect, so far as the Contracting Party denouncing it is concerned, within one year.

Other examples: Lake Tanganyika Convention, 2003, Art. 43; Columbia Treaty, 1960, Art. XIX; and Dniester Treaty, 2012, Art. 31.

Supporting resources (*non-exhaustive*)

- Anthony Aust, "Treaties, Termination", in *Max Planck Encylopedias of Internaitonal Law*, https://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1491?rskey=ZKbdM3&result=5&prd=OPIL .
- Vienna Convention on the Law of Treaties, 1969.



Djoudj National Bird Sanctuary, Senegal

Practical Guide for the Development of Agreements or Other Arrangements for Transboundary Water Cooperation

Developing transboundary agreements and establishing joint bodies is a key obligation for riparian Parties to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes ("1992 Water Convention"). However, the reporting under the 1992 Water Convention and on SDG indicator 6.5.2, which measures the existence of operational arrangements in shared basins, show that developing agreements on transboundary waters remains a challenge.

At its eighth session in October 2018, the Meeting of the Parties to the 1992 Water Convention therefore decided to undertake activities supporting the development of agreements and the establishment of joint bodies, including the preparation of a practical guide on developing agreements and good practices.

This publication seeks to support countries in the design and drafting of agreements or other arrangements for transboundary waters, including both surface and groundwaters, that are effective, adaptable and sustainable. Where needed and appropriate, and where agreed by the Parties, the Practical Guide could also support a review and update of arrangements already in place.

This publication is intended for State representatives, legal and technical experts, decision-makers involved in negotiation of agreements or other arrangements for transboundary waters, the staff of river basin organizations, regional organizations, and other stakeholders working on transboundary cooperation and water diplomacy. It ultimately aims to support implementation of the Water Convention and acceleration of progress towards SDG 6 and its target 6.5.

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ISBN 978-92-1-117271-3

Layout and Printing at United Nations, Geneva – 2111650 **(E)** – October 2021 – 649 – **ECE/MP.WAT/68**