

# Guide to reporting under the Water Convention and as a contribution to SDG indicator 6.5.2



UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

# **Guide to reporting under the Water Convention and as a contribution to SDG indicator 6.5.2**



United Nations

Geneva, 2020

© 2020 United Nations

This work is available open access by complying with the Creative Commons license created for inter-governmental organizations, available at <http://creativecommons.org/licenses/by/3.0/igo/>

Publishers must remove the UN emblem from their edition and create a new cover design. Translations must bear the following disclaimer: "The present work is an unofficial translation for which the publisher accepts full responsibility." Publishers should email the file of their edition to [permissions@un.org](mailto:permissions@un.org).

Photocopies and reproductions of excerpts are allowed with proper credits.

The findings, interpretations, and conclusions expressed herein are those of the author(s) and do not necessarily reflect the views of the United Nations or its officials or Member States.

Links contained in the present publication are provided for the convenience of the reader and are correct at the time of issue. The United Nations takes no responsibility for the continued accuracy of that information or for the content of any external website.

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

Photo credits: iStock

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

Contact information

Water Convention secretariat

Email: [transboundary\\_water\\_cooperation\\_reporting@un.org](mailto:transboundary_water_cooperation_reporting@un.org)

Website: <http://www.unece.org/env/water>

ECE/MP.WAT/60

UNITED NATIONS PUBLICATION

eISBN: 978-92-1-004838-5

Cover photos:

Top left: Zambezi River and Victoria Falls at the border between Zambia and Zimbabwe

Middle left: Hoover Dam, Colorado River shared by Mexico and the USA

Bottom left: ICPDR Secretariat, Vienna International Centre, Danube River, Austria

Right: Ban Gioc–Detian Falls, Quây Sơn River, at the border between China and Vietnam



Flooded Evros/Maritsa/Meriç River at the border between Greece and Turkey



Rio de la Plata between Argentina and Uruguay

## FOREWORD

The majority of the world's transboundary rivers, lakes and aquifers are shared between two or more riparian states. The status of transboundary water cooperation can vary greatly between shared watercourses and aquifers. The introduction of a reporting mechanism under the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) and the Sustainable Development Goals framework (specifically SDG indicator 6.5.2) therefore marks an important step in the support of transboundary water cooperation. The aim is to assist countries to improve cooperation with their neighbours on shared water resources.



While the first reporting exercise in 2017/18 can be considered a great success, it also became evident that a guide to completing the reporting template would be useful for providing advice on the process of preparation of the national reports, filling out the different sections of the questionnaire, clarifying key terminologies, and giving specific guidance on completing the various questions. Ultimately, the aim of the Guide is to enhance the quality of national reports, which in turn will ensure that evidence-based reporting strengthens transboundary water cooperation across national, regional and global agendas.

The development of this guide has been the result of a dedicated inter-governmental drafting group composed of about 40 States worldwide. The Guide is specifically designed for experts responsible for coordinating the reporting process and completing the reporting template on SDG indicator 6.5.2 and under the Water Convention. Users of the Guide should find it useful for identifying some good practices in the completion of the reporting template.

Finland and Uganda both have a long experience of cooperation over shared water resources with their neighbours and reporting on that experience. It has therefore been a pleasure to co-chair the Drafting Group on the Guide to reporting. The fruitful discussions held during the drafting group meetings, and the end product will undoubtedly support all countries sharing water resources to review and enhance the status of their transboundary water cooperation.

We therefore hope that the Guide will foster the implementation of the Water Convention and provide valuable contributions to the monitoring of SDG indicator 6.5.2. We encourage all countries sharing transboundary waters to use this Guide to enhance their reporting on transboundary water cooperation.



**Seppo Rekolainen**

Ministry of Agriculture and Forestry, Finland

Co-chair of the Drafting Group of the Guide to reporting under the Water Convention and as a contribution to SDG indicator 6.5.2



**Callist Tindimugaya**

Ministry of Water and Environment, Uganda

Co-chair of the Drafting Group of the Guide to reporting under the Water Convention and as a contribution to SDG indicator 6.5.2



## ACKNOWLEDGEMENTS

This publication has been prepared under the framework of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) and in the framework of the UN-Water Integrated Monitoring Initiative for SDG 6. It would not have been possible without the generous contribution of many Governments, individuals and partner organizations.

The Water Convention secretariat expresses its gratitude to the many experts who provided cases studies, comments and other contributions.

We would particularly like to thank the participants of the Drafting Group of the Guide to reporting under the Water Convention and as a contribution to SDG indicator 6.5.2.

The Drafting Group meetings were chaired by Mr. Seppo Rekolainen (Finland) and Mr. Callist Tindimugaya (Uganda) and were composed of experts from the following countries and organizations: Algeria (Mr. Said Meziane and Mr. Abdelouahab Smati), Austria (Mr. Ernst Ueberreiter), Belarus (Ms. Cheravach Alena and Ms. Sniazhana Dubianok), Bosnia and Herzegovina (Ms. Gorana Basevic and Mr. Bosko Kenjic), Botswana (Mr. Gilbert Gwati and Mr. David Rax Molefha), Brazil (Ms. Luciana Andrade, Mr. Irani Ramos, Mr. Julio Thadeu Silva Kettelhut and Mr. Henrique Veiga), Cameroon (Mr. Daniel Claude Wang Sonne), Chad (Mr. Younane Nelngar), China (Ms. Liya Gu and Mr. Changchun Zhang), Côte d'Ivoire (Mr. Martin Kouassi Kouadio), Egypt (Mr. Ayman Tharwat Amin Abdel Aziz and Ms. Jasmine Moussa), Georgia (Ms. Nino Janelidze), Ghana (Mr. Ben Yaw Ampomah and Ms. Dorcas Adwoa Paintsil), Guatemala (Ms. Elisa Colom De Morán), Hungary (Mr. Peter Kovacs), Jordan (Ms. Mona Dahabiyeh), Mexico (Ms. Rocio Salinas Prado), Mongolia (Mrs. Erdenetsetseg Sugar), Netherlands (Mr. Jos Timmerman), Panama (Ms. Emet Herrera), Peru (Mr. Juan Carlos Pomareda and Mr. Fernando Reategui), Republic of Moldova (Mr. Adrian Delinschi and Mr. Cyrille Vallet), Russian Federation (Ms. Oxana Kozlova), Senegal (Mr. Moussa Berthe), Slovenia (Mr. Aleš Bizjak), Somalia (Mr. Abdiwahid Ibrahim Ahmed and Mr. Ahmed Mohamed Hassan), South Africa (Mr. Kennedy Mandaza), Turkey (Mr. Akif Mehmet Kirecci, Ms. Simla Yasemin Ozkaya and Ms. Şule Ürün), United Republic of Tanzania (Mr. Sylvester Matemtu), United States of America (Mr. Roger Pulwarty), Viet Nam (Ms. Thi Viet Hoa Le and Ms. Thu Hang Ngo), Implementation Committee of the Water Convention (Ms. Dinara Ziganshina), Global Water Partnership (Ms. Yumiko Yasuda), the Inter-Agency Network for SDGs (Mr. François Di Salvo), the United Nations Environment Programme (Mr. Gareth Lloyd) and the United Nations Economic and Social Commission for Western Asia (Mr. Ziad Khayat).

Additional comments and inspiration were gratefully provided by experts from the following countries and organizations: Central African Republic (Mr. Jean Christophe Robembe), Germany (Ms. Heide Jekel), Luxembourg (Ms. Anne-Marie Reckinger), Mexico (Ms. Monica Camarena), Peru (Mr. Enrique Meseth), Poland (Ms. Joanna Wojcik), Portugal (Mr. Antonio Branco) and Mr. Jac van der Gun (expert of the United Nations Educational, Scientific and Cultural Organization).

Mr. Alistair Rieu-Clarke, Northumbria University and UNECE consultant, is the main author of the Guide.

From the Water Convention secretariat Ms. Sarah Tiefenauer-Linardon coordinated the development of the publication. Ms. Francesca Bernardini and Ms. Sonja Koeppel contributed to the improvement of the publication through their inputs and comments. Ms. Cammile Marcelo provided administrative support to the process. The publication was edited by Ms. Cathy Lee and was translated by Ms. Yulia Isaeva into Russian, Ms. Kristel Jurado and Ms. Hélène Devèze into French, and Ms. Fe Sanchis Moreno into Spanish.

The secretariat gratefully acknowledges the funding provided by Germany and the support received in the framework of the UN-Water Integrated Monitoring Initiative for SDG 6.

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

## CONTENTS

<b>Foreword</b> .....	<b>v</b>
<b>Acknowledgements</b> .....	<b>vii</b>
<b>1. Introduction</b> .....	<b>1</b>
1.1. Why report on transboundary water cooperation? .....	1
1.2. Why the need for a guide? .....	2
1.3. The process of developing the guide .....	2
1.4. The rationale for the layout of the guide.....	3
1.5. How does reporting under the Water Convention relate to SDG reporting, and SDG indicators 6.5.1 and 6.5.2 in particular?.....	3
1.6. Organizing the reporting process.....	5
1.7. How best to maximize the reporting process to advance transboundary cooperation	8
<b>2. Guidance on the template for reporting under the Water Convention     and SDG indicator 6.5.2 (sections II to IV)</b> .....	<b>13</b>
<b>References</b> .....	<b>56</b>

## LIST OF FIGURES

Figure 1. Structure of the reporting template for the second reporting exercise.....	4
Figure 2. Possible timeline of steps in the submission of the report .....	6

## LIST OF TABLE

Table 1. Guidance on completing section II of the report .....	17
--	----

## LIST OF BOXES

Box 1.	Organizing the national reporting exercise in Chad.....	6
Box 2.	Organizing the national reporting exercise in the Republic of Belarus .....	6
Box 3.	How Hungary coordinated its national reporting exercise with other Danube riparian States .....	7
Box 4.	How to engage with UNECE and UNESCO during the reporting process.....	8
Box 5.	Tips on completing the reporting template.....	10
Box 6.	Minutes as ‘arrangements’ .....	14
Box 7.	Finland’s experience in organizing reporting under section II .....	18
Box 8.	Brazil’s experience of reporting on transboundary aquifers .....	19
Box 9.	Examples of subsidiary bodies under the Zambezi Water Commission .....	28
Box 10.	Example of subsidiary bodies under the Interstate Commission for Water Coordination of Central Asia .....	29
Box 11.	Hungary’s cooperation with Black Sea States through the International Commission for the Protection of the Danube River (ICPDR) .....	33
Box 12.	Master Plan for the Development and Management of the Senegal River .....	34
Box 13.	The Sava River Basin Management Plan .....	34
Box 14.	Environmental flows in the context of South Africa’s transboundary waters .....	36
Box 15.	Côte d’Ivoire’s experience in data and information exchange on transboundary waters .....	38
Box 16.	Experience of data and information exchange between Ghana and Volta Basin States .....	39
Box 17.	Monitoring of the North Western Sahara Aquifer System .....	41
Box 18.	International Warning and Alarm Plan of the International Commission for the Protection of the Rhine.....	43
Box 19.	Joint Finnish-Russian Action Programme on the Utilisation of Frontier Waters on Risk Management in Case of Adverse Hydrological Conditions in the Vuoksi River Basin District .....	45
Box 20.	Practical application of Minute 323 under the 1944 Treaty between Mexico and the United States of America .....	46
Box 21.	Procedures for Notification, Prior Consultation and Agreement (PNPCA) and stakeholder participation in the Mekong River Basin.....	48
Box 22.	Stakeholder involvement in the Senegal River Basin .....	48



Confluence of Zaskar and Indus Rivers in India

# 1. Introduction

## 1.1. Why report on transboundary water cooperation?

Reporting on the Sustainable Development Goal (SDG) indicator 6.5.2 and under the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) first took place in 2017. Following a review of the initial reporting exercise that solicited feedback from participating States, it was felt that subsequent reporting exercises should take place every three years. A guide to reporting could also assist States in completing the template for reporting, while at the same time improving the overall quality and comparability of national reports (UNECE, 2018).

The decision to develop a guide reflects a strong commitment to reporting as a means to systematically review, and more effectively enhance, the implementation of the Convention and SDG indicator 6.5.2 at multiple levels.

- At national and transboundary levels
  - Reporting allows States to identify specific basin needs and, in turn, helps determine how best to mobilize resources to support implementation activities, such as through capacity-building and technical assistance.
  - Reporting provides a means to assess any strategies and approaches to transboundary water cooperation at the national level.
  - Where a broad spectrum of national experts is involved in the reporting exercise, reporting can help develop a collective understanding of any transboundary water challenges and/or opportunities that may arise, and by systematically reviewing the current state of play reporting helps mobilize the necessary actors into action by the State concerned.
  - Given that the Water Convention is now open to all UN Member States, reporting can offer States a means to assess the extent to which their current progress on transboundary water cooperation is consistent with the provisions of the Water Convention. In turn, States can use the reporting outcomes to compare their practices with the experiences of the Parties to the Convention and therefore tailor best practices to their particular needs.
- At the Convention level
  - Reporting identifies emerging implementation issues and difficulties across multiple transboundary waters, allowing States to effectively and collectively respond to any challenges.
  - Reporting offers a collective repository of lessons learned and good practices.
  - Reporting helps keep the public informed of measures taken to implement the Convention and, through synthesizing and disseminating the results, draws greater political attention to transboundary water cooperation both at national and international levels.

While reporting aims to monitor transboundary water cooperation, it is important to recognize from the outset that reporting takes place at the national level. States are therefore asked to provide their perspective, which is particularly important when considering questions related to both the level of implementation of arrangements and the performance of joint bodies (section II of the reporting template), as well as questions related to the national measures put in place to support the implementation of any transboundary arrangements (section III of the reporting template). States sharing a particular river, lake or aquifer may choose to coordinate their responses (as will be shown below), but ultimately they may have different views on how to progress towards transboundary water cooperation.

## 1.2. Why the need for a guide?

The primary aim of this guide is to enhance the quality of national reports, which will ultimately strengthen their usefulness in informing decision-making and policy-making processes related to transboundary water cooperation at the national, basin or aquifer, regional and global levels. More specifically, the guide explains how the reporting template might be completed. It clarifies key terminology and provides practical examples of how certain questions might be answered. In addition, the guide offers guidance on how to organize the reporting process and how to utilize reporting to maximize its impact. The guide is therefore designed as a practical document for government experts who have the responsibility for conducting the reporting process and completing the template.

## 1.3. The process of developing the guide

In seeking to maximize its usefulness, this guide was developed through an inter-governmental drafting group that brought together around 40 States from Africa, Central Asia, Europe, the Middle East, North and South America, and South-East Asia. Two meetings of the drafting group took place in Geneva. During its first meeting in May 2019, the drafting group reviewed an outline of the guide prepared by the Water Convention Secretariat. The Secretariat then developed a full draft of the guide, which included individual inputs from members of the drafting group. This draft was circulated to States sharing transboundary waters and other experts for comment. At the second meeting of the drafting group in September 2019, the drafting group reviewed the comments received on the initial draft. The text of the guide was subsequently revised and approved by the Water Convention's Integrated Water Resources Management (IWRM) Working Group in October 2019. The final version of the guide was published in January 2020. The process of developing the guide therefore reflects an open inter-governmental process involving a wide range of viewpoints from States sharing transboundary waters, which informed the final output.



*First drafting group meeting on the Guide to reporting, Geneva 9–10 May 2019*



*Second drafting group meeting on the Guide to reporting, Geneva 3–4 September 2019*

## 1.4. The rationale for the layout of the guide

The guide closely follows the structure of the revised reporting template that was adopted at the 8<sup>th</sup> session of the Meeting of the Parties to the Water Convention in its Decision VIII/1 (UNECE, 2018). However, prior to dealing with the content of the reporting template, the following two sections will consider the process of reporting and how best to maximize the reporting process in order to advance transboundary water cooperation.

Chapter two follows the template for reporting (sections II to IV) and provides specific guidance on completing the questions contained therein. This is achieved by including an annotated version of the template that uses a numbering system to link with the relevant paragraphs of the guide.

Where considered appropriate, guidance is offered on three key aspects: i) definitions of certain key terms; ii) suggestions on how States might approach answering certain questions; and iii) examples drawn from the experiences of States during their first reporting exercise. **It should be stressed from the outset that the guide offers guidance to States, but ultimately States must decide how best to report on their own particular situation.**

## 1.5. How does reporting under the Water Convention relate to SDG reporting, and SDG indicators 6.5.1 and 6.5.2 in particular?

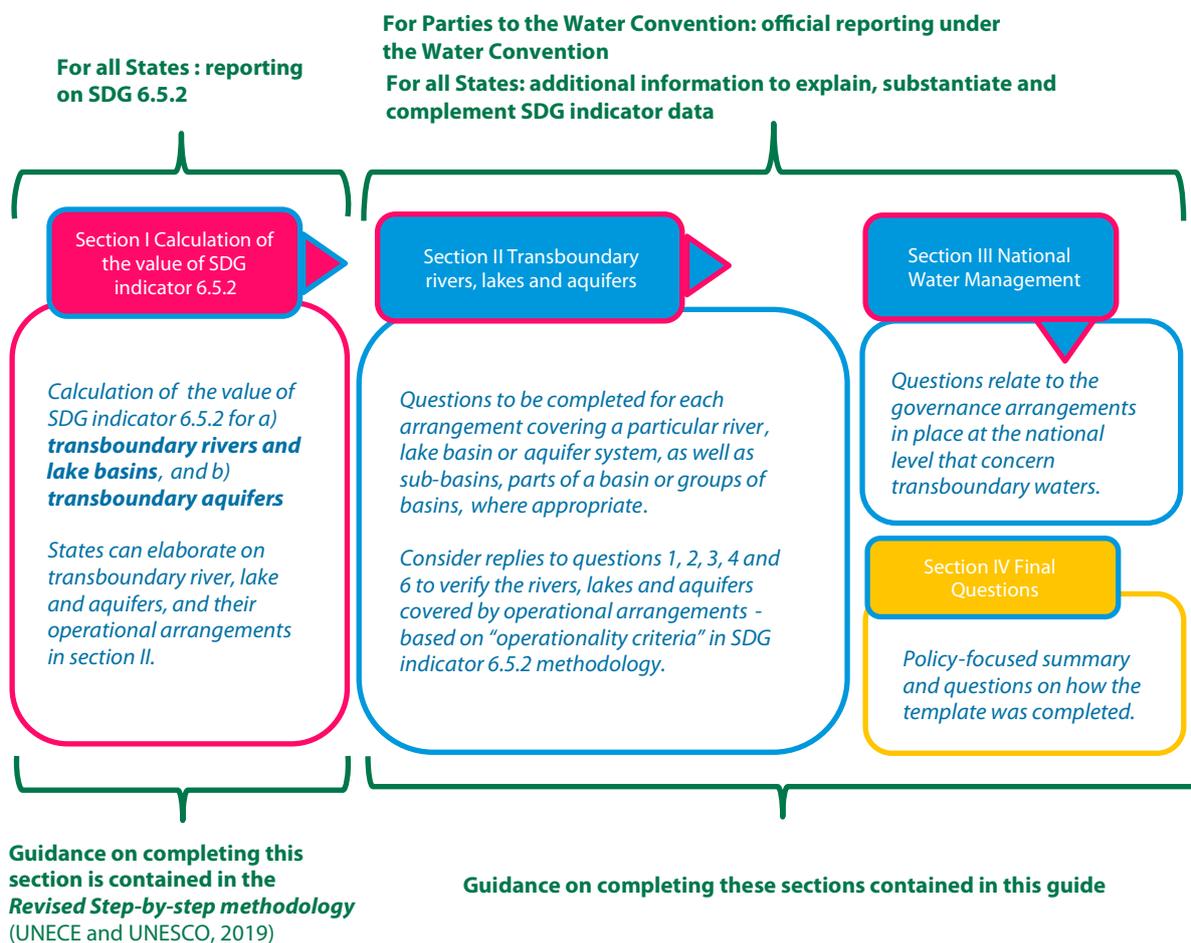
As part of the SDG framework, the United Nations General Assembly adopted SDG 6, which seeks to 'ensure availability and sustainable management of water and sanitation for all' by 2030 (UN, 2017). A set of eight targets and 11 indicators were developed to monitor progress towards achieving SDG 6. These targets and indicators are monitored through the UN-Water Integrated Monitoring Initiative for SDG 6, which brings together the eight United Nations organizations that are formally mandated to compile country data on the SDG 6 global indicators (UN-Water, 2019). Key objectives of the Integrated Monitoring Initiative are: i) to develop methodologies and tools to monitor SDG 6 global indicators; ii) to raise awareness at the national and global levels of SDG 6 monitoring; iii) to enhance technical and institutional capacity for monitoring; and iv) to compile country data and to report on global progress towards SDG 6 (UN-Water, 2019).

In terms of transboundary water cooperation the most salient target is 6.5, which states 'by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate'. SDG target 6.5 is monitored through two indicators: i) SDG indicator 6.5.1, which measures the 'degree of integrated water resources management implementation (0-100)'; and ii) SDG indicator 6.5.2, which measures the 'proportion of transboundary basin area with an operational arrangement for water cooperation'. The United Nations Environment Programme (UNEP) was designated as the custodian agency for SDG indicator 6.5.1, and the UNECE and UNESCO were designated as co-custodian agencies for SDG indicator 6.5.2.



The introduction of reporting under the Water Convention coincided with the adoption of the SDGs and their targets and indicators. In order to maximize synergies between reporting under SDG indicator 6.5.2 and the Water Convention, both the UNECE and UNESCO coordinated the reporting processes. From a practical standpoint this means that reporting for SDG indicator 6.5.2 and reporting under the Water Convention were aligned through the use of a single reporting template. Figure 1 illustrates how the alignment is structured. Section I is focused on gathering data to calculate the value of SDG indicator 6.5.2. Sections II to III are focused on the aspects of reporting relevant to the implementation of the Water Convention, while also allowing States to further explain, substantiate and complement the data provided under section I. Section IV summarizes the key challenges and achievements in transboundary water cooperation, and provides background information on the reporting process, e.g. the persons responsible for completing the reporting template.

**Figure 1. Structure of the reporting template for the second reporting exercise**



By completing all the sections of the reporting template the Parties to the Water Convention have the benefit of using one template to report both on SDG indicator 6.5.2 and on the progress made in implementing the Water Convention. All States sharing transboundary waters also benefit from completing all sections of the template, as many of the questions contained in sections II-IV and the terminology used help to substantiate the calculation of the value of SDG indicator 6.5.2 (section I). The template also provides States with a fuller picture of the progress made on transboundary water cooperation within the State than can be explained from the value of the SDG indicator 6.5.2 alone, i.e. in section I. **Completing the entire template affords States a greater appreciation of cooperative efforts than can be captured solely by SDG indicator 6.5.2.**

Given the complementarity between these two reporting exercises, this guide has been developed in coordination with materials that support the completion of SDG indicator 6.5.2, and in particular the **Step-by-Step Methodology for SDG Indicator 6.5.2** (revised version '2020') (UNECE and UNESCO, 2019). Common definitions and explanations of key terminology contained in this guide and the step-by-step methodology are aligned to assist States in completing both the SDG indicator 6.5.2 (section I) and the rest of the template (sections II-IV).

Within the framework of UN-Water Integrated Monitoring Initiative for SDG 6, reporting on SDG 6.5.2 has also been coordinated with other SDG indicators, particularly SDG 6.5.1, which measures the implementation of IWRM at all levels, including the transboundary level. In relation to transboundary cooperation, States are asked to report on the degree of IWRM implementation in their most important rivers, lakes and aquifers, including their arrangements for transboundary water management, any organizational frameworks in place, the degree to which data and information is exchanged, the level of financing for transboundary cooperation, and gender mainstreaming. Reporting on SDGs 6.5.1 and 6.5.2, while complementary, offers a fuller picture of IWRM implementation at both the national and transboundary levels.

## 1.6. Organizing the reporting process

Although much will depend on the particular context of the State, the experience gained during its first reporting exercise will offer some guidance on how the reporting process might be organized. In some instances, given for example the level of centralized knowledge and the number of transboundary waters shared, it might be appropriate that one agency and/or a few experts complete the template, whereas a broader collaborative process may be justified when data and information has to be gathered from different national ministerial departments and/or sub-national entities.

### Box 1. Organizing the national reporting exercise in Chad

Chad established a committee for reporting whose first task was to identify the relevant ministries and other organizations that could assist in the reporting exercise. These included the Ministry of Water (Directorate for Water Resources and Directorate for Water Supply); basin organizations (Lake Chad Basin Commission, Niger Basin Authority, Nubian Sandstone Aquifer Authority); and the Ministry of the Environment and Fisheries (Directorate for Environmental Assessment; Directorate for Waste, Pollution and Nuisance; Directorate for the Conservation and Protection of Biodiversity and Ecosystems; Directorate for Climate Change Adaptation). The Committee then sent the template to these ministries and organizations. Members of the Committee took responsibility for following up on the relevant parts of the template that were either completed by the ministries and organizations themselves or by members of the Committee in consultation with the designated entities. The completed template was then finalized and reviewed by the Committee. Incomplete answers or clarifications were followed up by the Committee with the relevant ministry or organization. Finally, the Committee reviewed the report before its submission.

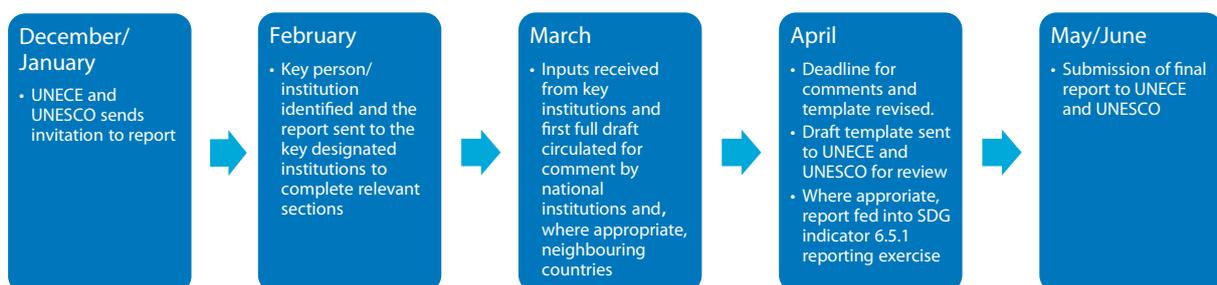


Herders giving their camels water from a well in Chad

Below are some general points to consider when organizing the reporting process:

- **Designate a key person or organization** that has overall responsibility for coordinating the reporting exercise. A designated organization such as the Ministry of Water, the National Statistical Office and/or an agency responsible for overseeing the entire SDG process will depend on the national context. National focal points for the Water Convention may be the key person(s) or organization for reporting purposes, though this may not always be the case.
- **Identify stakeholders that should be involved in the reporting exercise** and consider possible sources of information. Section IV of the template provides an indicative list of the types of institutions that may be consulted during the reporting exercise, such as the ministry or authority responsible for water, the environment agency, a basin authority or authorities, local or provincial government, the national geological survey or agency, non-water specific ministries (foreign affairs, finance, forestry, agriculture and/or energy), national statistical offices, civil society organizations, water user associations, and the private sector.
- **Develop an indicative timeline for completion of the reporting exercise.** Reporting takes place every three years with the deadline for submitting national reports set at 30 June. It is important to respect this deadline as late submissions compromise the ability of the custodian agencies to report to the UN Statistical Commission on SDG indicator 6.5.2 and UNECE to fully analyse the national reports in advance of the following session of the Meeting of the Parties. The timeline below highlights key milestones that States might follow to ensure the timely submission of their reports.

**Figure 2. Possible timeline of steps in the submission of the report**



### Box 2. Organizing the national reporting exercise in the Republic of Belarus

In the Republic of Belarus, the Ministry of Natural Resources and Environmental Protection acted as the coordinator of the reporting exercise. The process of completing the template was carried out by sending the reporting template (or parts thereof) to the organizations or agencies responsible for the relevant activities set out in the template. Where necessary, the designated Ministry held informal consultations with these organizations or agencies to complete the reporting exercise. The Ministry further analysed the completed template before its submission to UNECE.



Neman river shared by Belarus, Lithuania and Russia

**Where possible, engage with neighbouring States sharing transboundary waters, as well as joint bodies and regional organizations to exchange views on the completion of the template or to coordinate answers concerning transboundary issues.** As noted earlier, in certain instances States may have differing opinions over the level of implementation within a particular river, lake or aquifer. Nevertheless, the quality of reporting can be improved by providing States with the opportunity to compare their responses and, if appropriate, to formulate a common response. As the case of Hungary illustrates (Box 3), bilateral or basin institutions may provide a valuable forum through which to discuss the reporting exercise and to identify the potential to coordinate national responses. In addition, regional organizations with a mandate related to transboundary water cooperation may be able to support the reporting process (see the experience of the African Ministers' Council on Water (AMCOW, 2019) and the United Nations Economic and Social Commission for Western Asia (UNESCWA, 2018)). If discussions with neighbouring States are envisaged, consider the opportunities to use the meetings of any joint bodies or commissions well in advance of the reporting deadline.

### Box 3. How Hungary coordinated its national reporting exercise with other Danube riparian States

For section II of the template, Hungary's report was structured into one part relating to the Danube Basin, which encompassed the 1994 Convention on Cooperation for the Protection and Sustainable Use of the River Danube and the International Commission for the Protection of the Danube River, and seven additional parts that covered each transboundary commission that Hungary has with its riparian neighbours. These existing bilateral transboundary commissions were called upon to consult with neighbouring States so as to coordinate the responses to section II of the template. Colleagues responsible for reporting in neighbouring States were contacted through the secretaries of the bilateral commissions, and discussions on reporting took place either during regular commission meetings or by email. As there were some differences concerning the understanding of the questions, the national responses to each question were not identical. In some cases however, Hungary's original responses were revised as a result of discussions with its neighbours. The exercise was therefore helpful in understanding the similarities and differences that exist between the States on a particular transboundary water issue.



Danube river in Budapest, Hungary

- **Distinguish between reporting for the first time and updating a previously submitted report.** Where a previous report has been submitted, the reporting exercise might be used as a means to enhance the existing submission. States might focus on addressing certain gaps in the previous report(s) or provide more detailed responses to open questions. In addition, **where two or more States sharing the same transboundary waters have submitted previous reports, they might view the subsequent reporting exercise as an opportunity to coordinate their responses, as appropriate.**

#### Box 4. How to engage with UNECE and UNESCO during the reporting process

As noted above, UNECE and UNESCO, through the UN-Water Integrated Monitoring Initiative for SDG 6, have a mandate to support reporting under SDG indicator 6.5.2 and the Water Convention. Together with other partners, UNECE and UNESCO provide technical support such as the organization of regional and global workshops, which are designed to assist States throughout the reporting exercise. UNECE and UNESCO are also able to support States with any specific questions they may have during the reporting exercise.

Any queries related to the reporting process can be sent by email:

- UNECE: [transboundary\\_water\\_cooperation\\_reporting@un.org](mailto:transboundary_water_cooperation_reporting@un.org)
- UNESCO: [transboundary\\_water\\_cooperation\\_reporting@unesco.org](mailto:transboundary_water_cooperation_reporting@unesco.org)

Additional materials related to SDG indicator 6.5.2 are available at the following websites:

- UN-Water: <http://www.sdg6monitoring.org/indicators/target-65/indicators652/>
- UNECE: [http://www.unece.org/water/transboundary\\_water\\_cooperation\\_reporting.html](http://www.unece.org/water/transboundary_water_cooperation_reporting.html)
- UNESCO: <http://ihp-wins.unesco.org/documents/332>



### 1.7. How best to maximize the reporting process to advance transboundary cooperation

Reporting on transboundary water cooperation, especially for States that share multiple transboundary waters with several neighbouring States, can require significant effort. It is therefore important that States take advantage of the reporting process so as to reap the maximum benefits of reporting.

Opportunities to exploit the benefits of reporting to advance transboundary water cooperation can be seen at multiple levels.

#### • At the national level

- The process of reporting offers States the opportunity to systematically review both their national and transboundary governance arrangements. The methodology of the reporting template means that the process allows States to clearly identify and assess the benefits obtained from cooperation, as well as any difficulties or opportunities that impede or advance cooperation, and responsibilities, gaps and risks related to cooperation.
- Reporting that is done in a consultative manner that engages a broad constituency of stakeholders can foster a common understanding of existing challenges and opportunities related to transboundary water cooperation.
- The results from the reporting process offer important insights into how a State might advance national strategies for transboundary water cooperation. States might therefore consider synthesizing the results of the reporting exercise into national factsheets that can help inform national dialogues and decision-making processes related to transboundary water cooperation.

(see for example SDG Indicator 6.5.1 status factsheets at <http://iwrmdataportal.unepdhi.org/iwrmmmonitoring.html>). In addition, an action plan might be developed in order to agree on priority areas that require progress prior to the next reporting exercise.

- **At the transboundary level**

- Where the reporting process is coordinated with neighbouring States, the benefits of consultation among stakeholders at the national level can also extend to the transboundary level. For example, States can utilize the reporting process to reach a common understanding of progress in transboundary water cooperation, or to implement an agreement for a particular river, lake or aquifer system or between two States sharing several transboundary waters. As shown in the case of Hungary (Box 3), reporting might be tabled at meetings of any of the joint bodies for transboundary water cooperation. Meetings of joint bodies might provide an opportunity to: i) discuss the results of the reporting exercise; ii) reach an agreement on key challenges and opportunities for advancing transboundary water cooperation and to develop an action plan; and iii) monitor the implementation of the action plan.

- **At regional and global levels**

- The outcomes of national reporting can inform policy dialogues at regional and global levels. For example, data and information gathered by reporting can inform activities under the Water Convention, including the three yearly programmes of work of the Convention (see UNECE, 2019a), and the activities of its working groups and other bodies, such as the Implementation Committee. To support the assimilation of the results from the reporting exercise, the Water Convention Secretariat prepares a synthesis report based on the national reports (UNECE, 2018a).
- At the global level and within the SDG framework, the data and information gathered from national reports can inform the UN High-level Political Forum on Sustainable Development, the United Nations annual report on progress towards the SDGs (UN, 2018a), and the UN-Water SDG 6 Synthesis Report on Water and Sanitation (UN-Water, 2018). In addition, the custodian agencies present the results of the reporting exercise in a report dedicated to SDG indicator 6.5.2 (UNECE, UNESCO and UN-Water, 2018).
- Results from the reporting exercise can be used by regional organizations to inform their own reporting exercises or to facilitate dialogue on transboundary water cooperation at the regional level. For instance, the African Ministers' Council on Water (AMCOW) has introduced a harmonized process for monitoring and reporting on water and sanitation targets across several international agreements and regional commitments (AMCOW, 2019). Another example is how the UN Economic and Social Commission for Western Africa (UNESCWA) has used the SDG 6.5.2 reporting exercise to assess how to advance transboundary water cooperation within the Arab region (UNESCWA, 2018).

### Box 5. Tips on completing the reporting template

The sections below offer guidance on completing specific questions and sections of the reporting template. A number of more generic tips for completing the template are provided here.

- When answering open questions, ensure that the **responses are succinct while at the same time offering a “meaningful story”**.
- Where appropriate, **provide links to further background information**, such as the websites of projects and programmes and river basin organizations, maps of transboundary waters, and the texts of agreements and other arrangements.
- Consider sharing the **drafts** of the template with UNECE and UNESCO for feedback prior to the formal submission of the reports.
- **Plan** carefully and in good time to ensure that reports are submitted by the June deadline.
- **Check for inconsistencies in responses**, particularly in relation to the SDG Indicator 6.5.2 criteria for operationality and the detailed responses in section II, particularly on questions 1 and 2 (on basins and arrangements), 3 (on joint bodies), 4 (on objectives, strategies and plans), and 6 (on data exchange).
- **Make sure to report on all transboundary rivers, lakes and aquifers**, even where an agreement or other arrangement and/or a joint body has not yet been established.
- **There are no prizes for coming first!** Reporting is a collective exercise designed to gain a shared understanding of progress in transboundary water cooperation and to identify areas that might need support. No benefit is therefore derived from either under- or over-estimating the current progress in implementing cooperative arrangements.





Ilha Solteira Dam, Parana River shared by Argentina, Brazil, Paraguay

## 2. Guidance on the template for reporting under the Water Convention and SDG indicator 6.5.2 (sections II to IV)

This chapter follows the template for reporting on sections II to IV and provides specific guidance on completing the questions contained therein. An annotated version of the template is presented, which uses a numbering system in order to link with the relevant paragraphs of the guide.

[1] For guidance on completing section I, refer to the revised *Step-by-Step Methodology for SDG Indicator 6.5.2* (UNECE and UNESCO, 2019).

### Template for reporting: section II

#### SECTION II [1]

Does your country have transboundary agreements or arrangements for the protection and/or management of transboundary waters (i.e. rivers, lakes or groundwater), whether bilateral or multilateral? [2]

Yes /No

*If yes, list the bilateral and multilateral agreements or arrangements (listing for each of the countries concerned):*  
[fill in] [3]

[2] What is a 'transboundary agreement or arrangement for the protection and/or management of transboundary waters'?

**Agreements and arrangements are formal commitments falling under the scope of the 1969 Vienna Convention on the Law of Treaties entered into by Parties in written form and governed by international law** (see UNECE, 2013, para. 240), such as the 1970 Treaty on the Rio de la Plata Basin or the 2001 Agreement between the Government of the Republic of Kazakhstan and the Government of the People's Republic of China on Cooperation in the Use and Protection of Transboundary Rivers. The Guide to Implementing the Water Convention goes on to state that, 'the words "other arrangements" refers to less formal types of agreements as well as other forms of cooperation and mutual understandings between the Riparian Parties'; and that, 'other arrangements in no way are to be regarded as non-committal instruments' (UNECE, 2013, para. 240). Examples include the 2010 Joint Declaration on Understanding and Cooperation in the Field of Use of Water Resources on the Respective Territories of the Shared River Basins between Bulgaria and Greece, or the 2002 Minutes adopted by Algeria, Libya and Tunisia on the North-Western Sahara Aquifer Systems through the Establishment of a Consultative Mechanism.

**Agreements and arrangements can be called by many different names:** As noted above, a key consideration in determining whether or not an instrument can be considered an 'agreement or arrangement' is whether it constitutes a formal commitment, in written form, between the Parties. Less relevant is the name given to the instrument, such as a convention, treaty, protocol, memorandum of understanding, joint declaration, exchange of letters or minutes (for further examples see UNECE, UNESCO and UN-Water (2018), p. 44, figure 21).

**Agreements or arrangements may include, 'cases in which provisions on transboundary water cooperation are part of a wider agreement on environmental protection or an agreement on economic cooperation'** (UNECE, 2013, para. 240). For example, in 1998, Ecuador and Peru adopted the Agreement on Border Integration, Development and Neighbourhood, which although broad in nature, seeks to harmonize policies for the sustainable use of ecosystems on the common border and ensures for the rational use of shared resources. **However, more general agreements or arrangements that operate at a global or regional level should not be included.** The 2007 Convention for the Prevention of Natural Disasters in Central America (<http://www.cepredenac.org/>) would therefore not be considered a transboundary agreement for the purposes of this question. **Similarly, global and regional agreements related to transboundary water cooperation would not constitute 'agreements or arrangements for the protection and/or management of transboundary'** as they are general in nature and their implementation relies on States establishing specific agreements or arrangements at the basin, sub-basin or bilateral level. Examples include the Water Convention, the Convention on the Law of the Non-navigational Uses of International Watercourses (1997 UN Watercourses Convention), the 2000 Revised Protocol on Shared Watercourses in the Southern African Development Community (2000 Revised SADC Protocol), and the EU Water Framework Directive.

**Agreements or arrangements may be interim.** An agreement or arrangement that is in force for a fixed period of time might therefore be included. See for example the 2002 Tripartite Interim Agreement between Mozambique, South Africa and Swaziland for Co-operation on the Protection and Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourse, which 'shall remain in force until 2010 or until superseded for the relevant watercourse by comprehensive water agreements on the Incomati and Maputo watercourses' (Art. 18(2)).

**Agreements or arrangements may be entered into by sub-national entities.** In limited circumstances, authority to enter into agreements or arrangements may be delegated to sub-national entities. For example, the Parties to the 2002 Agreement on the Protection of the River Scheldt are Belgium, France the Netherlands, as well as the Walloon, Flemish and Brussels-Capital regions in Belgium. Similarly, the 2007 Arrangement on the Protection, Utilisation and Recharge of the Franco-Swiss Genevois Aquifer was concluded between the Republic and Canton of Geneva in Switzerland, and the Community of 'Annemassienne' region, the Community of the 'Genevois' region and the Rural District of Viry in France.

[3] When listing bilateral and multilateral agreements or arrangements, include the official title of the agreement or arrangement, the date when the agreement or arrangement was adopted, and the date of entry into force, if different. See for example the Agreement between the Federal Republic of Nigeria and the Republic of Niger concerning the equitable sharing in the development, conservation and use of their common water resources, 18 July 1990, or the Agreement on the Establishment of the Zambezi Watercourse Commission, 13 July 2004, which entered into force 19 June 2011.

### Box 6. Minutes as 'arrangements'

The United States and Mexico share the waters of the Colorado River and the Rio Grande. The 1944 Water Treaty (hereafter 'the Treaty') and other binational agreements guide how the two governments share the flows of these rivers. The Treaty authorizes the International Boundary and Water Commission (IBWC) to develop rules, address transnational disputes, and issue proposed decisions called 'Minute Agreements' (hereafter 'Minutes') on treaty execution and interpretation, subject to the approval of the two governments. 'Minutes' are primarily clarifications of technical details and language which were not explicit in the original Treaty. Minutes meet all four criteria for an 'arrangement for water cooperation' under SDG Indicator 6.5.2 criteria, and fall under the overarching Treaty. This procedure's flexibility allows a joint body, the IBWC (criterion 1), to respond to changing conditions through regular communications (criterion 2) without the need to re-negotiate the Treaty. The major joint objectives (criterion 3), regulated by agreement of the Parties and documented in



the Minutes, concern: i) salinity; ii) sanitation; and iii) water shortages. The compliance mechanisms include: i) the regular exchange of information (criterion 4) between the States; ii) monitoring construction, quantity and quality of surface water; iii) prior consultation; and iv) financing assistance. The agreements establish the rules by which water will be shared during a surplus, or which restrictions will be adopted during drought, as well as protecting the ecology of the Colorado River Delta. Minutes have included non-governmental organizations, and by guiding the implementation of the Treaty they represent an extraordinary framework for collaboration that helps citizens in both countries.



## Template for reporting: section II

### II. Questions for each transboundary basin, sub-basin, part of a basin, or group of basins (river, lake or aquifer) [4] [5] [6]

Please complete this second section for each transboundary basin (river or lake basin, or aquifer), sub-basin, part of a basin or a group of basins covered by the same agreement or arrangement where conditions are similar<sup>1</sup>. In some instances, you may provide information on both a basin and one or more of its sub-basins or parts thereof, for example, where you have agreements<sup>2</sup> or arrangements on both the basin and its sub-basin. You may coordinate your responses with other States with which your country shares transboundary waters, or even prepare a joint report. General information on transboundary water management at the national level should be provided in section III and not repeated here.

Please reproduce this whole section with its questions for each transboundary basin, sub-basin, part of a basin or group of basins for which you will provide a reply. [7]

**Name of the transboundary basin, sub-basin, part of a basin or group of basins: [fill in] [8]**

List of the riparian States: [fill in]

**In the case of an aquifer, what is the nature of the aquifer and its relation with the river or lake basin:**

Unconfined aquifer connected to a river or lake [9]

Unconfined aquifer with no or limited relation with surface water [10]

Confined aquifer connected to surface water [11]

Confined aquifer with no or limited relation with surface water

Please describe: [fill in]

Unknown [12]

**Percentage of your country's territory within the basin, sub-basin, part of a basin or group of basins: [fill in] [13]**

<sup>1</sup> In principle, section II should be submitted for every transboundary basin (river, lake or aquifer) in the country, but States may decide to group basins in which their share is small or leave out basins in which their share is very minor, e.g., below 1 per cent.

<sup>2</sup> In section II, "agreement" covers all kinds of treaties, conventions and agreements ensuring cooperation in the field of transboundary waters. Section II can also be completed for other types of arrangements, such as memorandums of understanding.

[4] A **'basin'**, for the purposes of reporting, can refer to a river basin, a lake basin or an aquifer system, including, in the case of a river, its main channel and tributaries. A basin, as stated in the *Guide to Implementing the Water Convention*, can be defined as 'the entire catchment area of a surface water body [river or lake] or a recharge area of the aquifer', which would encompass, 'the area receiving the waters from rain or snow melt, which drain downhill (on the surface or below the surface of the ground in the unsaturated or saturated zones) into a surface water body or which infiltrate through the subsoil (i.e. the unsaturated zone) into an aquifer' (UNECE, 2013, para. 74).

[5] A **'sub-basin'** constitutes a subset of a river or lake basin and usually refers to an area of land from which all surface run-off flows through a series of streams, rivers and, possibly, lakes to a particular point in a watercourse such as a lake or a river confluence (see Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy (EU Water Framework Directive, Art. 2).

[6] **'Part of a basin'** refers to an area of a basin that is a sub-set of a basin but may not necessarily fully align to a sub-basin. For instance, a State may report on part of a basin where they have entered into a bilateral agreement that covers transboundary waters at the border area between two States, such as the Agreement between the Government of the Federal Republic of Germany and the Government of the Republic of Poland on common improvement of the situation on waterways in the German-Polish border area, or the 1995 Agreement on Cooperation for Border Development between Panama and Costa Rica.

[7] Section II has been structured in a way that seeks to capture the different scenarios faced by States when reporting on their agreements or arrangements. It is critical that States report in a way that allows for meaningful analysis across transboundary waters, which requires that the national report clearly sets out to which basin, sub-basin, part of a basin or group of basins a particular agreement or arrangement applies. Table 1 illustrates the different scenarios that the template attempts to capture, and offers guidance on how States might structure section II of their report. **Ultimately, States must decide how best to present their own situation.**

[8] Where appropriate, and to allow for cross-State comparison, States are encouraged to consult the UNEP-GEF Transboundary Water Assessment Programme (TWAP) for a list of transboundary rivers, lakes and aquifers that their State shares:

- For rivers: <http://twap-rivers.org/indicators>
- For lakes: <https://www.ilec.or.jp/en/activities/twap>
- For aquifers: <http://twapviewer.un-igrac.org> and [https://apps.geodan.nl/igrac/ggis-viewer/region\\_information](https://apps.geodan.nl/igrac/ggis-viewer/region_information)

[9] An **'unconfined aquifer'** can be described as 'an aquifer whose upper water surface (water table) is at atmospheric pressure and thus is able to rise and fall' (USGS, 2019). Where such an aquifer is hydrologically connected to a river or lake it can be described as **'an unconfined aquifer connected to a river or lake'**. Three scenarios might be envisaged to describe an aquifer as transboundary, namely: i) both the underlying aquifer and river or lake may intersect a sovereign border; ii) the aquifer may intersect a sovereign border and be connected to a river or lake situated exclusively within the territory of one State; or iii) the aquifer may be situated exclusively within the territory of one State but connected to a river or lake that intersects a sovereign border (Eckstein and Eckstein, 2005).

[10] As noted above, unconfined aquifers must have some relationship with the surface of the ground. Where a sovereign border intersects such an aquifer, it is recharged only through precipitation (rainfall or snowmelt) rather than surface water flows, and if it does not significantly discharge into a surface water body it might be considered as **'an unconfined aquifer with no or limited relation to surface water'**.

Table 1. Guidance on completing section II of the report

	State shares one basin with one other State	State shares one basin with two or more States	State shares two or more basins with one other State	State shares two or more basins with two or more States
<b>Basin arrangement(s) in place for all transboundary waters but no arrangements in place for any sub-basins or parts of basins</b>	Complete all questions once in section II for the basin that is shared  Section II may be completed for sub-basins but is not required	Complete section II for the basin that is shared	Complete all questions in section II for each basin  <i>Note!</i> Does an arrangement cover several basins? If so, answers to questions 1, 2 and 3 can be repeated for each basin, whereas questions 4–13 may be answered differently for each basin (see Box 7 for example)	Complete all questions in section II for each basin  <i>Note!</i> Does an arrangement cover several basins? If so, answers to questions 1, 2 and 3 can be repeated for each basin, whereas questions 4–13 may be answered differently for each basin (see Box 7 for example)
<b>Basin arrangement(s) in place for all transboundary waters and additional arrangement(s) in place for sub-basin(s) or part(s) of basin</b>	Complete section II again for sub-basin(s) or part of a basin(s) with arrangement(s) in place  <i>Note!</i> Does an arrangement cover several basins or sub-basins? If so, answers to questions 1, 2 and 3 can be repeated for each basin or sub-basin, whereas questions 4–13 may be answered differently for each basin or sub-basin (see Box 7 for example)	Complete section II for any basin arrangement(s)	Complete section II for each basin arrangement	Complete section II for each basin arrangement
<b>Basin arrangement(s) only in place for one or some basins and no arrangement(s) in place for any sub-basins or parts of basins</b>	Not applicable	Complete section II for each basin arrangement	For basins with no basin arrangement(s) complete beginning of section II (including question 1), question 2 (only if a joint body exists), and questions 4–13 for each basin (only where applicable, e.g. cooperative activities taking place in the absence of an arrangement)	For basins with no basin arrangement(s) complete beginning of section II (including question 1), question 2 (only if a joint body exists), and questions 4–13 for each basin (only where applicable, e.g. cooperative activities taking place in the absence of an arrangement)
<b>No arrangements are in place for the basin(s) but arrangements in place for sub-basin(s) or parts of a basin</b>	Complete beginning of section II (including question 1), question 2 (only where applicable, e.g. cooperative activities taking place in the absence of an arrangement)	Complete II again for arrangement(s) covering a sub-basin or part of a basin  <i>Note!</i> Where an arrangement covers two or more sub-basins or parts of different basins, questions 1, 2 and 3 can be repeated for each sub-basin or part of a basin, whereas questions 4–13 may be answered differently for each basin	Complete beginning of section II (including question 1), question 2 (only if a joint body exists), and questions 4–13 for each basin (only where applicable, e.g. cooperative activities taking place in the absence of an arrangement)	Complete beginning of section II (including question 1), question 2 (only if a joint body exists), and questions 4–13 for each basin (only where applicable, e.g. cooperative activities taking place in the absence of an arrangement)
<b>No arrangements are in place for the basin(s), sub-basin(s) or parts of a basin</b>	Complete beginning of section II (including question 1), question 2 (only where applicable, e.g. cooperative activities taking place in the absence of an arrangement)	Complete beginning of section II (including question 1), question 2 (only where applicable, e.g. cooperative activities taking place in the absence of an arrangement)	Complete beginning of section II (including question 1), question 2 (only where applicable, e.g. cooperative activities taking place in the absence of an arrangement)	Complete beginning of section II (including question 1), question 2 (only where applicable, e.g. cooperative activities taking place in the absence of an arrangement)

### Box. 7. Finland's experience in organizing reporting under section II

Finland shares water with all its neighbours: Sweden, Norway and Russia. Finland has bilateral agreements with all three States.

The agreement between Finland and Sweden entered into force in 2010 replacing the previous agreement from 1971. The agreement covers the entire basin of the River Torne/Tornionjoki with all its tributaries. The River Torne is the only transboundary river between Finland and Sweden.

The largest river basins that Finland shares with Norway are the catchment areas of the Teno/Tana, Näätämö/Neiden and Paatsjoki/Pasvik rivers. Finland and Norway concluded an Agreement with the Finnish-Norwegian Transboundary Water Commission in 1980.

Finland and the Russian Federation share a land border of approximately 1,300 km. Several hundreds of rivers cross the border between Finland and Russia. Many of them are small and close to their natural state. Nineteen of the larger river basins are included in the cooperation between both States. Out of the 19 basins, only six have major human impacts on both sides of the border. The largest transboundary watercourses are those of the Vuoksi and Paatsjoki/Pasvik rivers. The Agreement Concerning Frontier Watercourses, which covers all rivers crossing the border, was signed by Finland and the Soviet Union in 1964 and entered into force a year later. It was adopted by the Russian Federation after the dissolution of the Soviet Union in the early 1990s.

In the first reporting exercise, Finland reported all major rivers separately in section II. As the aforementioned bilateral agreements cover all rivers, the responses to questions 1–3 in section II were the same for each major river. However, the anthropogenic pressures are considered individually: in some rivers hydropower and municipal wastewater are key issues, while in others it is agricultural run-off. These facts made it necessary to draft a separate report (questions 4–13), as grouping rivers would fail to fully capture the individual characteristics that are evident in each river.



Torne River at the border between Sweden and Finland

[11] A **'confined aquifer'** is a fully saturated aquifer whose water pressure (including at its upper boundary) is greater than atmospheric pressure, and is directly overlain by an impermeable or poorly permeable layer, which confines it from the earth's surface or other rocks. As in the case of unconfined aquifers (see description above), confined aquifers can be subdivided into two sub-types: **'connected to surface water bodies'**, or **'with no or limited relation to surface water'**.

**'Semi-confined aquifers'** (sometimes called 'leaky confined') can be included under the category of 'confined aquifers'.

[12] This option should be chosen either because: i) data is available but—based on existing knowledge—it is not possible to classify the nature of the aquifer; or ii) data on the aquifer does not currently exist or is not available.

If the aquifer is **alternating in time between confined and unconfined conditions** or if it contains **both confined and unconfined zones** near the international border, then the respondent should classify it according to its most dominant condition.

[13] **Percentage of your State's territory within the basin, sub-basin, or part of a basin** should be calculated on the bases of [basin area in State] / [total basin area in all riparian or aquifer States]. **For groups of basins**, a figure should be provided for each basin. **Where the area of two or more transboundary aquifers overlap, this should be noted.**

### Box 8. Brazil's experience of reporting on transboundary aquifers

In the first reporting exercise Brazil reported eleven transboundary aquifers: Amazon Aquifer System (Brazil, Bolivia, Colombia, Ecuador, Peru and Venezuela); Aquidauana-Aquidabán Aquifer System (Brazil and Paraguay); Boa Vista Aquifer System (Brazil and Guyana); Caiuá/Bauru-Acaray Aquifer System (Brazil and Paraguay); Chuy Aquifer System (Brazil and Uruguay); Costeiro Aquifer System (Brazil and French Guyana); Grupo Roraima Aquifer System (Brazil, Guyana and Venezuela); Guaraní Aquifer System (Brazil, Argentina, Uruguay and Paraguay); Pantanal Transboundary Aquifer System (Brazil, Bolivia and Paraguay); Permo-Carbonífero Aquifer System (Brazil and Uruguay); and Serra Geral Aquifer System (Brazil, Argentina, Uruguay and Paraguay).

The Guaraní Aquifer System is one of the most extensively studied transboundary aquifers in Brazil. A series of relevant data and information has been obtained, not only from national studies but also from a general aquifer study supported by the Global Environment Facility (GEF) and containing consensus information from the four States that share the aquifer. These studies show that the Guaraní Aquifer System, although smaller than the total area of the Río de la Plata River Basin, falls slightly outside the river basin. Additionally, in the area of the Guaraní Aquifer System, there are two other major transboundary aquifers (the Serra Geral and the Caiuá/Bauru-Acaray). However, any potential connections between the aquifers are difficult to ascertain. Brazil's experience illustrates that, where data is available, any special characteristics of an aquifer, such as their relation with a river basin area or the area of another aquifer system, should be highlighted.



Blue Lake Cave, Mato Grosso do Sul State, Brazil

#### Template for reporting: section II, question 1

1. Is there one or more transboundary (bilateral or multilateral) agreement(s) or arrangement(s) [14] on this basin, sub-basin, part of a basin or group of basins?

One or more agreements or arrangements exist and are in force [15] [16]

Agreement or arrangement developed but not in force [17]

Agreement or arrangement developed but not in force for all riparians [18]

Please insert the name of the agreement(s) or arrangement(s) [fill in] [19]

Agreement or arrangement is under development [20]

No agreement or arrangement

If there is no agreement or arrangement or it is not in force, please explain briefly why not and provide information on any plans to address the situation: [fill in] [21]

**If there is no agreement or arrangement and no joint body or mechanism for the transboundary basin, sub-basin, part of a basin or group of basins then jump to question 4; if there is no agreement or arrangement, but a joint body or mechanism then go to question 3. [22]**

[14] For guidance on what constitutes an agreement or arrangement, see note [2] above.

[15] This question should be considered alongside the calculation of the value of SDG indicator 6.5.2, including the criteria for operationality (section I, *Revised Step-by-step methodology version 2020*, UNECE and UNESCO, 2019).

[16] **How to determine if an agreement or arrangement is 'in force'?** Entry into force is an important landmark for an agreement or arrangement. Prior to its entry into force, the Parties may only be obliged not to be at variance with the agreement or arrangement, but upon entry into force they are *legally* bound to take the necessary steps to implement the agreement or arrangement. The 1969 Vienna Convention on the Law of Treaties provides that 'a treaty enters into force in such manner and upon such date as it may provide or as the negotiating States may agree' (Art. 24). Ultimately, it is up to the Parties to decide when an agreement or arrangement enters into force, and this is usually provided for within the instrument itself. Entry into force therefore differs from the meaning of 'operational' arrangement as used in the SDG Indicator 6.5.2 calculation, with the latter only being satisfied once the four criteria for operationality have been satisfied (see *Revised Step-by-step methodology version 2020*, UNECE and UNESCO, 2019).

Usually, **any details related to entry into force are found in the last or final provisions within the agreement or arrangement itself.** The Agreement on Cooperation for the Sustainable Development of the Mekong River Basin (1995 Mekong Agreement for example, states that, 'This Agreement shall: Enter into force among all Parties [...] on the date of signature by the appointed plenipotentiaries' (Art. 36(A)). The 2010 Agreement on the Nile River Basin Cooperative Framework provides that, 'the present Framework shall enter into force on the sixtieth day following the date of the deposit of the sixth instrument of ratification or accession with the African Union' (Art. 43).

**If no details are contained within the agreement or arrangement related to entry into force, then there is an assumption that entry into force occurs when States demonstrate their consent to be bound by its terms.** This consent might be evidenced by, for example, a State transposing the agreement or arrangement into their national legislation through **ratification, accession, adherence or approval.** **Article 2(b) of the Vienna Convention on the Law of Treaties provides that, "'Ratification', 'acceptance', 'approval' and 'accession' mean in each case the international act so named whereby a State establishes on the international plane its consent to be bound by a treaty'.**

In certain situations, the signature of a government official with the requisite authority may be sufficient to commit a State to a particular agreement or arrangement. However, in other situations, a treaty may require that a State consents to be bound by its terms through the additional process of ratification, accession, acceptance or approval (UN Treaty Collection, 2019). For example, 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 was signed in Rome on 29 November 2012, but the Treaty only entered into force when it was ratified by Ukraine on 28 July 2017 (it was ratified by Moldova on 22 January 2013).

[17] **An agreement or arrangement developed but not in force** might relate to a situation where an agreement has been signed by some or all of the States concerned, but not yet ratified by the requisite number of States.

[18] **An agreement or arrangement developed but not in force for all riparians** might require ratification by three out of four riparian States before it enters into force. If only three States had ratified the agreement, it would not be in force for *all* riparian States.

[19] **For guidance on how to list agreements and arrangement see note [2] above.**

[20] **An agreement or arrangement under development** might include one that is being negotiated but not yet **adopted** by the relevant Parties. ‘**Adoption**’ can be described as ‘the formal act by which the form and content of a proposed treaty text are established’ (UN Treaty Collection, 2019). An agreement or arrangement may be adopted at an international meeting of the relevant Parties, usually through a majority vote or by consensus.

[21] This question provides States with an opportunity to highlight cooperative activities taking place within a basin or sub-basin that do not fully satisfy the criteria of being an ‘operational arrangement’ (see *Revised Step-by-step methodology version 2020*, UNECE and UNESCO, 2019).

[22] **In what situation might no agreement or arrangement exist but a joint body or mechanism is in place?** Generally, a joint body or mechanism is established pursuant to an agreement or arrangement (for a definition of ‘joint body or mechanism’, see note [38] below). However, in limited circumstances a joint body or mechanism may exist in the absence of an agreement or arrangement. For example, El Salvador noted in their first national report that a binational commission had been established with Guatemala to discuss transboundary water issues, but so far the two States have not been able to conclude an agreement concerning their shared river basins and aquifer systems. Along similar lines, Mexico identified 13 transboundary river basins with the United States which, while falling within the scope of the U.S.-Mexico International Boundary and Water Commission (IBWC), are not subject to a specific treaty. The only river basins covered by a bilateral agreement between the U.S. and Mexico are the Colorado, Grande and Tijuana river basins (see Treaty and Protocol on Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande between the United States and Mexico, 3 February 1944).

### Template for reporting: section II, question 2

#### Questions 2 and 3 to be completed for each bilateral or multilateral agreement or arrangement in force in the transboundary basin, sub-basin, part of a basin or group of basins.

2. (a) Does this agreement or arrangement specify the area subject to cooperation? [23]

Yes /No  [24]

If yes, does it cover the entire basin or group of basins and all riparian States? [25] [26] [27]

Yes /No

Additional explanations? [fill in] [28]

Or, if the agreement or arrangement relates to a sub-basin, does it cover the entire sub-basin? [29]

Yes /No

Additional explanations? [fill in]

Which States (including your own) are bound by the agreement or arrangement? (*Please list*): [fill in]

#### [23] How to determine the area subject to cooperation within an agreement or arrangement.

Article 9(1) of the Water Convention requires Riparian Parties to enter into agreements or other arrangements, and to specify in those instruments ‘the catchment area, or part(s) thereof, subject to cooperation’. Agreements or arrangements may cover an entire basin, a sub-basin, multiple basins and/or sub-basins, or part of the basin’ (see note [4-6] above). In some instances, the area that is subject to cooperation might be explicitly stated within an agreement or arrangement itself. For example, the 1998 Convention on Cooperation for the Protection and Sustainable Use of the Waters of the Luso-Spanish River Basins stipulates that ‘the Convention shall apply to the river basins of the Minho, Lima, Douro, Tagus and Guadiana’ (Art. 1; a definition of ‘river basin’ is also provided for in the Convention). Similarly,

the 2003 Protocol for Sustainable Development of Lake Victoria Basin provides a definition of the Lake Victoria Basin as being ‘geographical areas extending within the territories of the Partner States determined by the watershed limits of the system of waters, including surface and underground waters flowing into Lake Victoria’ (Art. 1(2)).

**What if an agreement or arrangement does not explicitly state whether or not it covers an entire basin or group of basins?** The text of the agreement or arrangement may provide some guidance. For example, the 2000 Agreement on the Establishment of the Zambezi Watercourse Commission stipulates that ‘the Agreement shall apply to the Zambezi Watercourse’ (Art. 2). The term ‘watercourse’ is defined in the Zambezi Agreement as ‘the system of surface and ground waters of the Zambezi constituting by virtue of their physical relationship a unitary whole flowing normally into a common terminus, the Indian Ocean’ (Art. 1). Along similar lines, ‘watercourse’ is defined in the Watercourses Convention as meaning ‘a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus’ (Art. 2(a)). While this might be seen as a narrower definition of the term ‘river basin’, Art. 1(1) of the Watercourses Convention stipulates that it ‘applies to uses of international watercourses and their waters for purposes other than navigation and to measures related to the uses of those watercourses and their waters’. Art. 1(1) is therefore widely interpreted as expanding the scope of the Watercourses Convention to cover the entire basin (McCaffrey, 2007, p. 37; Rieu-Clarke, Moynihan and Magsig, 2012, pp. 66–69; Tanzi and Arcari, 2001, p. 59). Ultimately, States must determine the intention of the Parties when entering into the agreement or arrangement. **While guidance is therefore provided here, it is up to the reporting State to interpret their agreement or arrangement.**

[24] If this question is answered ‘yes’ then *either* go to the next question relating to a basin **or** the subsequent question concerning a sub-basin.

[25] See note [23] above.

**[26] What if different provisions of an agreement or arrangement cover different parts of the basin?** In some instances, an agreement or arrangement may contain provisions that relate to certain parts of a basin, e.g. some provisions may relate to river flow regulation or allocation, whereas other provisions may be broader in scope, e.g. provisions related to ecosystem protection. In responding to question 2 it is not necessary to provide a detailed account of the scope of these different provisions, but rather consider *the overall purpose* of the agreement or arrangement.

[27] This question seeks to ascertain whether the text of the agreement or arrangement covers the entire basin and all riparian and/or aquifer States irrespective of whether those States are Party to the agreement or arrangement. A subsequent question asks *which* States are Party to the agreement or arrangement.

[28] Where the scope of an agreement or arrangement is not explicitly stated, some explanation as to how the text was interpreted to cover the entire (sub-) basin or not might be included here.

[29] For guidance on interpreting the scope of an agreement or arrangement see note [23] above.

### Template for reporting: section II, question 2

(b) If the agreement or arrangement relates to a river or lake basin or sub-basin, does it also cover aquifers? [30]

Yes /No

If yes, please list the aquifers covered by the agreement or arrangement: [fill in] [31]

[30] In some instances, an agreement or arrangement relating to a river, lake basin or sub-basin may explicitly state that it covers both surface water and groundwater. For instance, as noted in [23] above, the 2000 Agreement on the Establishment of the Zambezi Watercourse Commission applies to ‘the system of surface and ground waters of the Zambezi’. The Zambezi Agreement follows a similar approach to both the 2000 Revised SADC Protocol and the 1997 Watercourses Convention by including connected groundwater in the definition of a watercourse. The 1992 Water Convention uses the term ‘transboundary waters’, which is defined as ‘any surface or ground waters which mark, cross or are located on boundaries between two or more States’. Groundwater is therefore covered within the definition of ‘transboundary waters’, which—as opposed to the term ‘watercourse’—encompasses groundwater that is both connected and unconnected to the surface water of rivers and lakes (UNECE, 2013, p. 14). In other situations, agreements and arrangements may not explicitly refer to groundwater, but the Parties may agree to address transboundary groundwater issues in activities that support the implementation of the agreement or arrangement. In the latter circumstances, States may decide to answer ‘Yes’ to this question. However, as noted in [23] above, **interpreting whether an agreement covers aquifers or not will ultimately rest on the reporting State.**

[31] For guidance on listing aquifers see note [8].

### Template for reporting: section II, question 2

(c) What is the sectoral scope of the agreement or arrangement? [32]

- |                               |                          |
|-------------------------------|--------------------------|
| All water uses                | <input type="checkbox"/> |
| A single water use or sector  | <input type="checkbox"/> |
| Several water uses or sectors | <input type="checkbox"/> |

*If one or several water uses or sectors, please list (check as appropriate):*

#### Water uses or sectors

- |   |                          |
|---|--------------------------|
| Industry                                  | <input type="checkbox"/> |
| Agriculture                               | <input type="checkbox"/> |
| Transport (e.g. navigation)               | <input type="checkbox"/> |
| Households                                | <input type="checkbox"/> |
| Energy: hydropower and other energy types | <input type="checkbox"/> |
| Fisheries                                 | <input type="checkbox"/> |
| Tourism                                   | <input type="checkbox"/> |
| Nature protection                         | <input type="checkbox"/> |
| Other ( <i>please list</i> ): [fill in]   |                          |

[32] Some agreements or arrangements may explicitly state the uses and sectors that they aim to cover. In other instances, the uses and sectors covered by an agreement or arrangement may be implied from its purpose. For instance, the 2012 Treaty between the Government of the Republic of Moldova and the Cabinet Ministers of Ukraine on Cooperation in the Field of Protection and Sustainable Development of the Dniester River Basin (Dniester Treaty) stipulates that ‘the present Treaty shall apply to uses of waters of the Dniester River basin for purposes other than navigation and to measure of protection, preservation and management of water and other natural resources and ecosystems of the Dniester River basin related to those uses’ (Art. 2). Most uses and sectors, except navigation, would therefore appear to be covered by the Dniester Treaty.

### Template for reporting: section II, question 2

(d) What topics or subjects of cooperation are included in the agreement or arrangement?

#### Procedural and institutional issues

Dispute and conflict prevention and resolution

Institutional cooperation (joint bodies)

Consultation on planned measures [33]

Mutual assistance

#### Topics of cooperation

Joint vision and management objectives

Joint significant water management issues

Navigation

Human health

Environmental protection (ecosystem)

Water quality

Water quantity or allocation

Cooperation in addressing floods

Cooperation in addressing droughts

Climate change adaptation

#### Monitoring and exchange

Joint assessments

Data collection and exchange

Joint monitoring [34]

Maintenance of joint pollution inventories

Elaboration of joint water quality objectives

Common early warning and alarm procedures

Exchange of experience between riparian States

Exchange of information on planned measures

#### Joint planning and management

Development of joint regulations on specific topics

Development of international or joint river, lake or aquifer basin

management or action plans

Management of shared infrastructure

Development of shared infrastructure

Other (*please list*): [fill in] [35]

(e) What are the main difficulties and challenges that your country faces with the agreement or arrangement and its implementation, if any?

Aligning implementation of the agreement or arrangement with

- |  |                          |
|--|--------------------------|
| national laws, policies and programmes                           | <input type="checkbox"/> |
| Aligning implementation of the agreement or arrangement with     | <input type="checkbox"/> |
| regional laws, policies and programmes                           | <input type="checkbox"/> |
| Lack of financial resources                                      | <input type="checkbox"/> |
| Insufficient human capacity                                      | <input type="checkbox"/> |
| Insufficient technical capacity                                  | <input type="checkbox"/> |
| Tense diplomatic relations                                       | <input type="checkbox"/> |
| Non-participation of certain riparian countries in the agreement | <input type="checkbox"/> |
| No significant difficulties                                      | <input type="checkbox"/> |
| Other (please describe): [fill in] <a href="#">[36]</a>          |                          |

- (f) What are the main achievements in implementing the agreement or arrangement, and what were the keys to achieving such success? [fill in] [\[37\]](#)
- (g) Please attach a copy of the agreement or arrangement or provide the web address of the document (please attach document or insert web address, if applicable): [fill in]

[\[33\]](#) ‘Measures’ may relate to provisions contained within an agreement or arrangement that concern consultation measures at national and/or transboundary levels (e.g. via a joint body).

[\[34\]](#) **Monitoring** can be understood as ‘a process of repetitive measurements, for various defined purposes, of one or more elements of the environment according to pre-arranged schedules in space and time, using comparable methodologies for environmental sensing and data collection’ (UNECE, 2005, p. 6). For monitoring to be considered to be **‘joint monitoring’** a certain level of coordination between the riparian or aquifer States must be in place. The *Guide to Implementing the Water Convention* observes that ‘on the basis of internationally agreed procedures sampling, analysis and assessment of data can be, if not agreed otherwise, carried out on the national level’ (UNECE, 2013, para. 279). While data and information may therefore be gathered by individual States through national monitoring networks, a comparable methodology for data gathering and analysis must be in place at the transboundary level.

[\[35\]](#) For example, does the agreement or arrangement consider gender or account for the rights of indigenous people.

[\[36\]](#) For instance, **‘political instability’**, e.g. where society is divided by different geopolitical interests, may directly or indirectly affect the implementation of an agreement or arrangement. This option also provides States with an opportunity to highlight any factors that might preclude an arrangement from being considered ‘operational’ in accordance with the SDG Indicator 6.5.2 methodology (see *Revised Step-by-Step methodology version 2020*, UNECE and UNESCO, 2019).

[\[37\]](#) This open question allows States to highlight a broad range of achievements that might have resulted from the implementation of an agreement or arrangement, as well as the keys to achieving success. Examples of achievements may range from establishing a forum for addressing mutual concerns, developing a shared vision for the basin, the joint planning or development of the basin, or improvements in the social, political, economic and environmental conditions within the basin and the benefits thereof. Keys to success might include political will, good neighbourly relations, regional integration or a strong institutional framework, such as effective procedures for prior notification and consultation.

### Template for reporting: section II, question 3

3. Is your country a member of any joint body or mechanism for this agreement or arrangement? [38] [39]

Yes /No

If no, why not? (please explain): [fill in]

#### Where there is a joint body or mechanism

(a) If there is a joint body or mechanism, which kind of joint body or mechanism (please tick one)? [40]

Plenipotentiaries [41]

Bilateral commission [42]

Basin or similar commission [43]

Expert group meeting or meeting of national focal points [44]

Other (please describe): [fill in]

(b) Does the joint body or mechanism cover the entire transboundary basin, sub-basin, part of a basin or group of basins? [45]

Yes /No

(c) Which States (including your own) are members of the joint body or mechanism? (Please list): [fill in]

(d) Are there any riparian States that are not members of the joint body or mechanism? (please list): [fill in] [46]

[38] This question should be considered alongside the calculation of the value of SDG indicator 6.5.2, including the criteria for operationality (section I, *Revised step-by-step methodology*, UNECE and UNESCO, 2019).

[39] A '**joint body or mechanism**' can be defined as 'any bilateral or multilateral commission or other appropriate institutional arrangements for cooperation between the Riparian Parties' (Article 1(5), Water Convention). The *Guide to Implementing the Water Convention* (UNECE, 2013, paras. 258–260) highlights several common features of such a joint body or mechanism, namely: i) a permanent body meeting at reasonably regular intervals; ii) composed of representatives of the riparian States, headed usually by officials authorized for that purpose by governments; iii) usually comprised of a decision-making body, an executive body; iv) usually having a secretariat; and v) sometimes supplemented by subsidiary bodies, such as working or expert groups, monitoring units, data and processing units, a network of national offices, a consultative group of donors, an information centre, a training centre and/or observers.

[40] While likely to have the aforementioned features in common, a 'joint body or mechanism' may be called by a variety of names, including plenipotentiaries, a basin or bilateral commission, an expert group, a meeting of national focal points, a joint water authority, committee or working group.

[41] '**Plenipotentiaries for transboundary waters**' can be described as 'an official coming from a water management, environmental protection or other relevant national authority, appointed by a national government to facilitate and coordinate the implementation of a transboundary water agreement on behalf of a riparian State' (UNECE, 2013, para. 260).

[42] A '**bilateral commission**' may encompass the common features of a joint body or mechanism as described in note [39]. In contrast to a 'basin or similar commission', a bilateral commission will only be made up of two neighbouring States, and it is likely to cover all or several transboundary waters shared between those States. A bilateral commission is likely to have a more detailed institutional structure than plenipotentiaries.

[43] A **‘basin or similar commission’** may follow a similar institutional structure to a ‘bilateral commission’ but a key distinction is that a basin or similar commission is established for a specific basin and all States within that basin may be members, whereas a bilateral commission has only two State members.

[44] An **‘expert group meeting’** or a **‘meeting of focal points’** is likely to be similar to plenipotentiaries, but may follow a less formalized structure and schedule of meetings.

[45] The geographical scope of a joint body or mechanism can usually be found within the agreement or arrangement in which it is established, and is likely to align to the geographical scope of the agreement or arrangement itself (see note [23] above; see also UNECE, 2018b, p. 18).

[46] As explained in note [27], an agreement or arrangement may cover the entire basin, but not all riparian or aquifer States may be members. Question 3(d) seeks to capture this eventuality by providing the opportunity to list any State that is not party to a joint body or mechanism.

### Template for reporting: section II, question 3

(e) If not all riparian States are members of the joint body or mechanism how does the joint body or mechanism cooperate with them?

No cooperation

They have observer status [47]

Other (*please describe*): [fill in]

(f) Does the joint body or mechanism have any of the following features (*please tick the ones applicable*)?

A secretariat [48]

*If the secretariat is a permanent one, is it a joint secretariat or does each country host its own secretariat? (Please describe):* [fill in]

A subsidiary body or bodies [49]

*Please list (e.g. working groups on specific topics):* [fill in]

Other features (*please list*): [fill in] [50] [51]

[47] While a State may not be a full member of a joint body or mechanism, it may participate in meetings and activities as an observer. For example, while Austria, Italy, Liechtenstein and the Wallonia Region of Belgium are not members of the International Commission for the Protection of the Rhine (ICPR) they are given observer status on the Commission because they share parts of the Rhine river basin. Basin-wide activities are implemented through a Coordination Committee of members and non-members of the Rhine Commission.

[48] A **‘secretariat’** plays a range of primarily administrative functions within a joint body or mechanism. While multilateral joint bodies or mechanisms generally establish a joint secretariat, bilateral arrangements may allocate the functions of the secretariat between the two States involved, i.e. each State hosts its own secretariat. In other situations, the establishment of a secretariat may not be deemed necessary (see Saruchera and Lautze, 2016).

[49] A joint body or mechanism may establish subsidiary bodies in order to support the implementation of its activities. These subsidiary bodies—often called a working group, technical committee, task force or team—can cover a wide array of topics, such as flood management, hydrogeology and groundwater, water quality, navigational, ecosystem and biodiversity conservation, pollution prevention, accidental pollution, communication, finance, legal matters and data management (see UNECE, UNESCO and UN-Water, 2018, p. 46).

### Box 9. Examples of subsidiary bodies under the Zambezi Water Commission

The Zambezi Watercourse Commission (ZAMCOM) is an intergovernmental river basin organization established to promote the cooperative and coordinated management and development of the Zambezi Watercourse. The basin falls entirely within the Southern African Development Community (SADC) region and covers eight countries: Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe. The Commission was established through the ZAMCOM Agreement signed in 2004, which came into force in 2011. Its main objective is to promote the equitable and reasonable utilization of the water resources of the Zambezi watercourse, as well to ensure its efficient management and sustainable development.



#### The ZAMCOM Agreement established 3 main bodies:

The **Council of Ministers** is comprised of ministers responsible for water resources management and development of all Member States. The Council meets once annually in ordinary session to adopt and provide policy guidance, or to approve recommendations from the ZAMCOM Technical Committee (ZAMTEC). The Council may meet in an extraordinary session at the request of any Member State.

The **ZAMCOM Technical Committee (ZAMTEC)** consists of not more than three delegates from each Member State. The Committee meets once in ordinary session and may meet in an extraordinary session at the request of the secretariat. The Committee is tasked with implementing policies and decision of the council and such other tasks as may be assigned by the council from time to time.

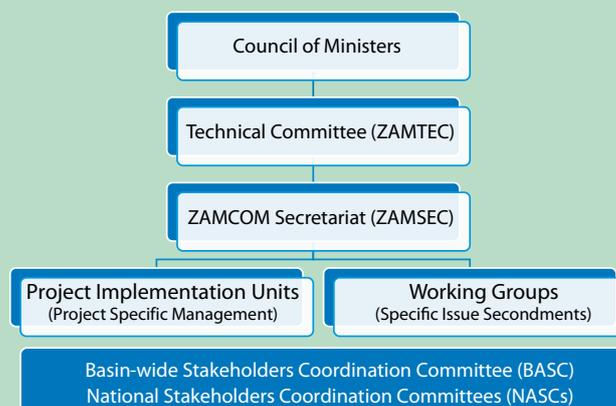
The **Secretariat (ZAMSEC)** is a joint secretariat of all the Member States and provides technical and administrative support to the council under the supervision of the ZAMTEC.

#### ZAMCOM has several subsidiary bodies, including:

The **Zambezi Sub-Committee on Hydrology (ZAMSCOH)** is a technical subsidiary body that advises ZAMTEC on hydrological issues.

**Technical working groups** are formed specifically to execute a specific project or task and are composed of technical subject experts from the riparian States who work on specific projects. For example, a **Joint Project Steering Committee (JPSC)** is formed whenever a project is conceived to offer strategic directions and technical advice.

**National Stakeholders Coordination Committees (NASC)** are platforms that ensure for the effective engagement and communication with key stakeholders in the riparian States. They are comprised of major relevant institutions and bodies of stakeholders such as government and non-governmental organizations, civil society, traditional leadership, academia, and so on. Key functions of the NASC are to serve as: i) a platform for national consultations to facilitate input into basin-wide processes, outputs, outcomes and decisions; ii) a vehicle for the dissemination of ZAMCOM plans, products and processes, as well as obtaining feedback; and iii) a multi sectorial platform for coordination and for fostering national ownership of ZAMCOM plans and processes.



**Basin-wide Stakeholders Coordination Committee (BASC)** is a body for coordinating and harmonizing basin-wide stakeholder involvement and engagement. The BASC is made up of NASC focal points and regional partners active in the basin. The key functions of BASC are: i) to coordinate NASC inputs into basin-wide ZAMCOM processes; ii) to plan and organize the annual Zambezi Basin Stakeholder Forum; and, iii) to serve as the core of a basin-wide consultative platform.



Lower Zambezi River in Zambia

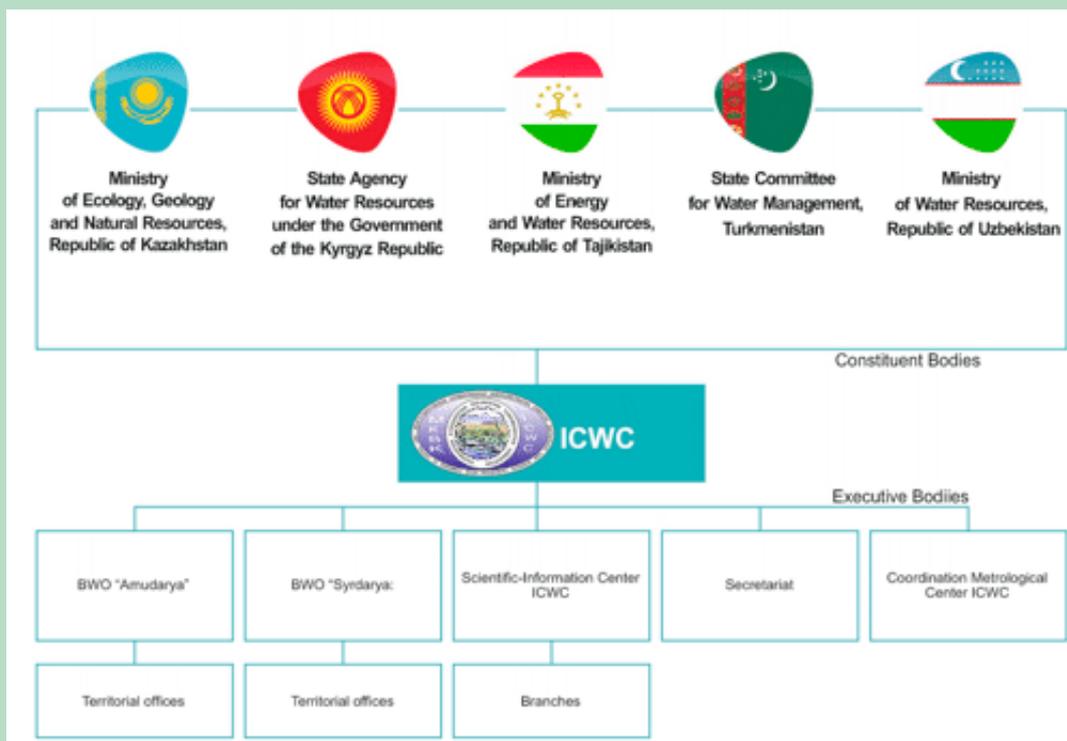
### Box 10. Example of subsidiary bodies under the Interstate Commission for Water Coordination of Central Asia

The Interstate Coordination Water Commission (ICWC) was established pursuant to the 1992 Agreement on Cooperation in the Field of Joint Management on Utilization and Protection of Water Resources from Interstate Sources between the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan and the Republic of Uzbekistan.



**The ICWC is made up of several subsidiary bodies, including:**

**Two Basin Water Organizations (BWOs): BWO 'Amudarya' and BWO 'Syrdarya' Basin Water**, which are responsible for the routine management and distribution of water resources between the riparian States of the Amudarya and Syrdarya river basins, including the timely and reliable delivery of water according to agreed limits.



The **ICWC Secretariat** supports the implementation of ICWC commitments in collaboration with other ICWC bodies. This includes the preparation of measures and draft decisions for ICWC meetings, the financial management of funds provided for ICWC activities, and the coordination of international communications.

The **Scientific-Information Center of the ICWC (SIC ICWC)** is responsible for the backstopping and technical support of ICWC activities at both regional and global levels. Through information support, training, networking, research and expertise, SIC ICWC also contributes to transboundary water cooperation and sustainable water management in Central Asia.

The **Coordination Metrological Center of the ICWC (CMC ICWC)** is responsible for the coordination of engineering policy and it supports ICWC programmes and decisions on the use, protection and accounting of water resources and water management systems.

For further information see <http://www.icwc-aral.uz>



[50] For example, how are gender considerations accounted for in any decision-making processes.

[51] Where available, an organigram of the joint body or mechanism could be included.

### Template for reporting: section II, question 3

(g) What are the tasks and activities of this joint body or mechanism?<sup>23</sup> [52]

- |   |                          |
|---|--------------------------|
| Identification of pollution sources   | <input type="checkbox"/> |
| Data collection and exchange  | <input type="checkbox"/> |
| Joint monitoring [53]   | <input type="checkbox"/> |
| Maintenance of joint pollution inventories                                      | <input type="checkbox"/> |
| Setting emission limits   | <input type="checkbox"/> |
| Elaboration of joint water quality objectives                                   | <input type="checkbox"/> |
| Management and prevention of flood or drought risks                             | <input type="checkbox"/> |
| Preparedness for extreme events, e.g. common early warning and alarm procedures | <input type="checkbox"/> |
| Surveillance and early warning of water related disease                         | <input type="checkbox"/> |
| Water allocation and/or flow regulation   | <input type="checkbox"/> |
| Policy development  | <input type="checkbox"/> |
| Control of implementation   | <input type="checkbox"/> |
| Exchange of experience between riparian States                                  | <input type="checkbox"/> |

- |   |                          |
|---|--------------------------|
| Exchange of information on existing and planned uses of water and related installations           | <input type="checkbox"/> |
| Settling of differences and conflicts   | <input type="checkbox"/> |
| Consultations on planned measures   | <input type="checkbox"/> |
| Exchange of information on best available technology  | <input type="checkbox"/> |
| Participation in transboundary EIA  | <input type="checkbox"/> |
| Development of river, lake or aquifer basin management or action plans                            | <input type="checkbox"/> |
| Management of shared infrastructure   | <input type="checkbox"/> |
| Addressing hydromorphological alterations   | <input type="checkbox"/> |
| Climate change adaptation   | <input type="checkbox"/> |
| Joint communication strategy  | <input type="checkbox"/> |
| Basin-wide or joint public participation and consultation of, for example, basin management plans | <input type="checkbox"/> |
| Joint resources to support transboundary cooperation  | <input type="checkbox"/> |
| Capacity-building   | <input type="checkbox"/> |
| Any other tasks ( <i>please list</i> ): [fill in]   |                          |

<sup>3</sup> This may include tasks according to the agreement or tasks added by the joint body, or its subsidiaries. Both tasks which joint bodies coordinate and tasks which they implement should be included.

[52] Tasks and activities of a joint body or mechanism may include those stated in the agreement itself or those that have been added by the joint body or its subsidiary bodies. Envisaged tasks and activities of joint bodies or mechanisms are provided for under Article 9(2) of the Water Convention and further explained in the UNECE *Guide to Implementing the Water Convention and Principles for Effective Joint Bodies for Transboundary Water Cooperation* (UNECE, 2013, paras 261–263; UNECE, 2018b). Tasks and activities coordinated and implemented by joint bodies should be included, as well as tasks and activities that are basin-wide or only implemented in part of the basin. Where only implemented in part of the basin, further explanation related to the scope of the activities may be provided at the end of the question, i.e. under '[fill in]'.

[53] For a definition of 'joint monitoring' see note [33] above.

### Template for reporting: section II, question 3

- (h) What are the main difficulties and challenges that your country faces with the operation of the joint body or mechanism, if any?
- |   |                          |
|---|--------------------------|
| Governance issues [54]                      | <input type="checkbox"/> |
| <i>Please describe, if any:</i> [fill in]   |                          |
| Unexpected planning delays                  | <input type="checkbox"/> |
| <i>Please describe, if any:</i> [fill in]   |                          |
| Lack of resources                           | <input type="checkbox"/> |
| <i>Please describe, if true:</i> [fill in]  |                          |
| Lack of mechanism for implementing measures | <input type="checkbox"/> |

Please describe, if true: [fill in]

Lack of effective measures

Please describe, if true: [fill in]

Unexpected extreme events

Please describe, if any: [fill in]

Lack of information and reliable forecasts

Please describe, if any: [fill in]

Others (please list and describe, as appropriate): [fill in]

(i) Does the joint body or mechanism or its subsidiary bodies meet regularly? [55]

Yes /No

If yes, how frequently does it meet?

More than once a year

Once a year

Less than once a year

(j) What are the main achievements with regards to the joint body or mechanism? [fill in] [56]

(k) Did the joint body or mechanism ever invite a non-riparian coastal State to cooperate? [57]

Yes /No

If yes, please give details. If no, why not, e.g. are the relevant coastal States also riparian States and therefore already members of the joint body or mechanism? [fill in]

[54] Governance issues in this question concern how decisions are made within the joint body or mechanism. Governance issues may therefore include questions concerning: i) legitimacy, i.e. is there equitable representation of stakeholders in decision-making fora? (see also question 13, p. 46); ii) accountability, i.e. how are decision-makers held to account for their actions?; and iii) transparency, e.g. how are decisions documented and communicated to stakeholders? Broader governance considerations in terms of the legal, political, economic and administrative systems that are in place to influence water use and management need not be considered here.

[55] This question should be considered alongside the calculation of the value of SDG indicator 6.5.2, including the criteria for operationality (section I, *Revised step-by-step methodology version 2020*, UNECE and UNESCO, 2019).

[56] Achievements might, for example, cover the development of joint products, the establishment of joint processes or working structures, or the creation of trust and mutual understanding.

[57] The Water Convention provides that 'in cases where a coastal State, being Party to this Convention, is directly and significantly affected by transboundary impact, the Riparian Parties can, if they all so agree, invite that coastal State to be involved in an appropriate manner in the activities of multilateral joint bodies established by Parties riparian to such transboundary waters' (Art. 9(3); see also UNECE, 2013, p.17–18). This provision of the Water Convention recognizes that coastal States (i.e. any State whose territory borders marine waters) that are **not** part of a transboundary basin or sub-basin, and therefore not members of a joint body or mechanism for that basin or sub-basin, may still be affected by activities taking place in the basin through, for example, land-based marine pollution. In such instances, coastal States might therefore be invited to participate in the work of a joint body or mechanism (see Box 11 on the Danube-Black Sea). **This question should not be ticked if the coastal State also has territory within the basin or sub-basin itself.**

### Box 11. Hungary's cooperation with Black Sea States through the International Commission for the Protection of the Danube River (ICPDR)

Hungary is a landlocked State and has no direct contact with the sea. However, through the Danube River, Hungary also has a link to the Black Sea. The ICPDR elaborated a cooperation agreement with the Black Sea Commission to minimize and prevent pollution from the Danube River Basin to the Black Sea, especially from nutrients. The ICPDR also acted as a forum for riparian States of the Danube and Black Sea States to collectively take steps to protect the Black Sea. Such steps include the adoption of more stringent measures by the riparian States related to nutrient removal from wastewater. This activity is in line with the EU Marine Strategy Framework Directive, which also requires landlocked States to coordinate their activities to prevent sea pollution.



#### Template for reporting: section II, question 4

4. Have joint objectives, a common strategy, a joint or coordinated management plan or action plan been agreed for the basin, sub-basin, part of a basin or group of basins? [58] [59]

Yes /No

*If yes, please provide further details:* [fill in] [60]

[58] This question should be considered alongside the calculation of the value of SDG indicator 6.5.2, including the criteria for operationality (section I, *Revised step-by-step methodology version 2020*, UNECE and UNESCO, 2019).

[59] For States that have an agreement or arrangement and a joint body or mechanism in place this question seeks to determine whether the States in question have cemented their cooperation through subsequent activities. **The joint objectives, strategy or plans should therefore *not be contained within the agreement or arrangement itself but adopted after the agreement or arrangement is in force through, for example, a decision of a joint body or mechanism.***

A range of post-agreement or arrangement instruments may be considered. For example, the Water Convention obliges riparian Parties to 'develop harmonized policies, programmes and strategies covering the relevant catchment areas, or parts thereof, aimed at the prevention, control and reduction of transboundary impact and aimed at the protection of the environment of transboundary waters' (Art. 2(6)). In addition, the Convention requires its Parties to set 'water-quality objectives and criteria for the purpose of preventing, controlling and reducing transboundary impact' (Art. 3(3)). Other instruments, such as a joint vision, declaration or principles, might also be included. These instruments may cover a variety of topics, including gender mainstreaming, basin management, climate change adaptation, environmental protection, flood risk management, hydropower, navigation, sedimentation management, sustainable development, and early warning and alarm systems.

**For States that do not have an agreement or arrangement in place, any cooperative efforts between the States, such as the development of a joint vision, might be included here.**

[60] Further details might include: i) the scope of any objective, plan or strategy and whether they are joint or coordinated; ii) when and how the instrument was adopted, e.g. decision of a joint body; iii) the timeframe; iv) any review mechanisms; v) how it is implemented; and vi) how progress is assessed. Where multiple objectives, strategies or plans have been adopted, the key overarching ones may be referred to, such as a joint or coordinated basin-wide management plan (see examples below).

### Box 12. Master Plan for the Development and Management of the Senegal River

Within the framework of the Organization for the Development of the Senegal River (OMVS), the riparian States developed a Master Plan for the development and management of the river; the result of an extensive consultation process with stakeholders that was carried out between 2009 and 2011. The Master Plan sets out concrete actions to achieve sustainable development within the basin by 2025, while protecting the river basin's ecosystems. The integration of various sectors, including hydropower, navigation, drinking-water and sanitation, transport, rural development, the environment, mining and industry is central to the plan. A key priority is to avoid the over exploitation of water within the basin through effective, equitable and sustainable water management. The plan can also be seen as a tool to reduce the risk of conflict related to the availability or accessibility of water resources within the basin, thereby contributing to peace and stability in the sub-region.

For further information see <http://www.omvs.org/>



Senegal River Delta, Senegal River shared by Mali, Mauritania, Senegal

### Box 13. The Sava River Basin Management Plan

The Framework Agreement on the Sava River Basin (FASRB) defines two main goals of cooperation in the field of water management: i) sustainable water management; and ii) the introduction of measures to prevent or limit hazards, and reduce and eliminate adverse consequences, including those from floods, ice hazards, droughts, and incidents involving substances hazardous to water.

According to the FASRB, the Parties (Bosnia and Herzegovina, Croatia, Serbia and Slovenia) shall cooperate on the basis of, and in accordance with, the EU Water Framework Directive (WFD), and develop joint or coordinated plans on the management of the water resources of the Sava River Basin, a sub-basin of the Danube River Basin. The International Sava River Basin Commission (ISRBC) is the implementation body of the FASRB.



Source of the Sava River in Slovenia

Pursuant to these obligations, the ISRBC coordinated the development of a joint Sava River Basin Management Plan (Sava RBMP). The first milestone of the Sava RBMP was the Sava River Basin Analysis Report (2009) that was the culmination of a comprehensive analysis of the Sava River Basin, including the characterization of the transboundary surface and groundwater bodies, the identification of their significant anthropogenic pressures and impacts, as well as aspects related to water quantity, water use, flood management and navigation. As a follow-up, the Sava RBMP was further developed to address the Sava River and its tributaries greater than 1,000 km<sup>2</sup>, rivers of basin-wide importance, and transboundary and national groundwater bodies that are important in size (>1,000 km<sup>2</sup>) or various other criteria.

The 1<sup>st</sup> Sava RBMP was adopted by the Parties in December 2014 and since that time the process towards the development of the 2<sup>nd</sup> Sava RBMP has taken place resulting in the finalization of the 2<sup>nd</sup> Sava River Basin Analysis Report (2016) and the Interim Overview for the Significant Management Issues (SWMIs) in the Sava River Basin with the report of the implementation of measures defined in the 1<sup>st</sup> Plan. With the 2<sup>nd</sup> Sava RBMP, the Parties follow the provisions of the EU Water Framework Directive (WFD) regarding the 6-year cycle of revision of the plans (available at: <http://www.savacommission.org/srbmp/>).



### Template for reporting: section II, question 5

5. How is the transboundary basin,-sub-basin, part of a basin or group of basins protected, including the protection of ecosystems, in the context of sustainable and rational water use? [61]

- Regulation of urbanization, deforestation, sand and gravel extraction.
- Environmental flow norms, including consideration of levels and seasonality [62]
- Water quality protection, e.g. nitrates, pesticides, faecal coliforms, heavy metals
- Water-related species and habitats protection
- Other measures (*please describe*): [fill in]

[61] This question seeks to ascertain whether measures have been adopted on the protection of ecosystems at the transboundary level; measures adopted at the national level are considered in the next section (see for example, section III, question 1(h), p. 52). The question also seeks to identify basin or sub-basin specific arrangements that are in place for the protection of ecosystems, such as programmes implemented by a joint body or mechanism. More general arrangements for the protection of conservation areas and/or habitats and species, such as Natura 2000 sites (European Commission, 2019), should not be included here. The protection of ecosystems is contained within the Water Convention, which calls upon Parties to take all appropriate measures ‘to ensure conservation and, where necessary, restoration of ecosystems’ (Art. 2(2)(d)), and ensure that ‘sustainable water-resources management, including the application of the ecosystems approach, is promoted’ (Art. 3(1)(i)) (see also UNECE, 2013, pp. 26–27). Along similar lines, the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses (Watercourses Convention) obliges watercourse States to ‘individually and, where appropriate, jointly, protect and preserve the ecosystems of international watercourses’ (Art. 20), while SDG Target 6.6 calls for the protection and restoration of water-related ecosystems by 2020 (UN-Water, 2019).

[62] ‘**Environmental flows**’ or similar terms such as ecological water release, environmental reserve, instream flows or e-flows consider whether there is ‘an adequate amount and quality of water at the right time to maintain their ecological character, to sustain nature and to provide water-related ecosystem services and benefits to humans’ (Ramsar, 2018). Such flows should consider seasonable variability within the water regime, as well as extreme periods, e.g. floods and droughts (see also WMO, 2019)

### Box 14. Environmental flows in the context of South Africa's transboundary waters

At the regional level, the Republic of South Africa is party to the 2000 South Africa Development Community (SADC) Revised Protocol on Shared Watercourses, which obliges its Parties to 'individually and, where appropriate, jointly, protect and preserve the ecosystems of a shared watercourse'. Implementation of this commitment can be challenging given the diverse governance systems in place within the 14 different SADC States sharing transboundary waters. At the national level, the South Africa National Water Act 1998 (chapter 3) deals with the protection of water resources, the classification of water resources and targeted measures. In so doing, the Act ensures all rivers in South Africa are environmentally protected. However, once waters move beyond South Africa's borders, ensuring that water use remains solely for ecosystem protection is challenging and requires bilateral and multilateral action. The Republic of South Africa has established transboundary cooperation with its neighbours on water issues through the adoption of basin arrangements and commissions. One of the most important arrangements is the 2002 Interim IncoMaputo Agreement; a water sharing agreement between the Republic of South Africa, the Kingdom of Eswatini (Swaziland) and Mozambique. In this agreement, the three riparian States introduced provisions related to Environmental Impact Assessment, as well as requirements related to environmental flows crossing sovereign borders. Since South Africa is upstream in most cases, it has committed to release set targets with the aim of maintaining the rivers' ecosystems, including their estuaries.



Auwabes Falls, Orange River shared by Lesotho, South Africa, Namibia

### Template for reporting: section II, question 6

6. (a) Does your country regularly exchange information and data with other riparian States in the basin, sub-basin, part of a basin or group of basins? [63] [64] [65] [66]

Yes /No

(b) If yes, how often: [67][68]

More than once per year

Once per year

Less than once per year

(c) Please describe how information is exchanged (e.g. in connection with meetings of joint bodies): [fill in] [69]

(d) If yes, on what subjects are information and data exchanged?

Environmental conditions

Research activities and application of best available techniques

Emission monitoring data

Planned measures taken to prevent, control or reduce

transboundary impacts

Point source pollution sources

Diffuse pollution sources

Existing hydromorphological alterations (dams, etc.)

Flows or water levels (including groundwater levels)

Water abstractions	<input type="checkbox"/>
Climatological information	<input type="checkbox"/>
Future planned measures with transboundary impacts, such as infrastructure development	<input type="checkbox"/>
Other subjects ( <i>please list</i> ): [fill in]	
Other comments, e.g. spatial coverage of data and information exchange: [fill in]	
(e) Is there a shared database or information platform?	
Yes <input type="checkbox"/> /No <input type="checkbox"/>	
(f) Is the database publicly available?	
Yes <input type="checkbox"/> /No <input type="checkbox"/>	
<i>If yes, please provide the web address:</i> [fill in]	
(g) What are the main difficulties and challenges to data exchange, if applicable?	
Frequency of exchanges	<input type="checkbox"/>
Timing of exchanges	<input type="checkbox"/>
Comparability of data and information	<input type="checkbox"/>
Limited spatial coverage	<input type="checkbox"/>
Inadequate resources (technical and/or financial)	<input type="checkbox"/>
Other ( <i>please describe</i> ): [fill in]	
Additional comments: [fill in]	
(h) What are the main benefits of data exchange on the basin, sub-basin, part of a basin or group of basins? ( <i>please describe</i> ): [fill in]	

[63] This question should be considered alongside the calculation of the value of SDG indicator 6.5.2, and the criteria for operability (see section I, *Revised step-by-step methodology version 2020*, UNECE and UNESCO, 2019).

[64] While this question is not prescriptive on the type of data and information that should be exchanged, some guidance on the type of data and information that might be exchanged can be found in the provisions of the Water Convention, the Watercourses Convention and the ILC 2008 Draft Articles on the Law of Transboundary Aquifers. The Water Convention obliges Riparian Parties to 'exchange reasonably available data, *inter alia*, on: (a) Environmental conditions of transboundary waters; (b) Experience gained in the application and operation of best available technology and results of research and development; (c) Emission and monitoring data; (d) Measures taken and planned to be taken to prevent, control and reduce transboundary impact; (e) Permits or regulations for waste-water discharges issued by the competent authority or appropriate body' (Art. 13(1); see also UNECE, 2013, pp. 82–84). Similarly, the Watercourses Convention, provides that 'watercourse States shall on a regular basis exchange available data and information on the condition of the watercourse, in particular that of a hydrological, meteorological, hydrogeological and ecological nature and related to the water quality as well as related forecasts' (Art. 9(1)); and the ILC Draft Articles on the Law of Transboundary Aquifers provides that 'aquifer States shall, on a regular basis, exchange readily available data and information on the condition of their transboundary aquifers or aquifer systems, in particular of a geological, hydrogeological, hydrological, meteorological and ecological nature and related to the hydrochemistry of the aquifers or aquifer systems, as well as related forecasts' (Art. 8(1)).

[65] Question 6(a) seeks to capture data and information that is regularly exchanged rather than one-off exchanges that relate, for example, to a planned project.

[66] Responses to question 6(a) should be considered alongside the other questions related to data and information exchange, including: i) the topics of cooperation included in an agreement (section II, question 2(d)); ii) the task and activities of a joint body (section II, question 3(g)); and iii) the main challenges in advancing transboundary water cooperation (section IV, question 1). A key distinction between these questions is that questions 2(d) and 3(g) of section II ask whether data and information exchange is provided for in an agreement or arrangement, or in the tasks and activities of a joint body or mechanism, whereas question 6(a) asks whether data and information is *actually* exchanged within the basin, sub-basin or part of basin irrespective of whether or not an agreement or arrangement is in place, or a joint body or mechanism has been established.

[67] Different types of data and information may be exchanged at different intervals. When responding to this question, the most frequent rate of data and information exchange should be considered.

[68] This question should be considered alongside the calculation of the value of SDG indicator 6.5.2 and the criteria for operationality (see section I, *Revised step-by-step methodology version 2020*, UNECE and UNESCO, 2019).

[69] Data and information might be exchanged through uploads to a common web-based information system, making them instantly available, or take place through the meetings of joint bodies or mechanisms (see examples of data and information in Box 15 and Box 16 by Côte d'Ivoire and Ghana respectively).

### Box 15. Côte d'Ivoire's experience in data and information exchange on transboundary waters

Côte d'Ivoire shares eight transboundary rivers: Niger, Volta, Comoé, Bia, Tanoé, Sassandra, Cavalla and Nuon.

River Basin Organizations (RBOs) are in place for the following:

- The Niger River Basin: the Niger Basin Authority (NBA) was established in 1980 after succeeding the Niger River Basin Commission and includes nine Riparian States (Burkina Faso, Benin, Cameroon, Côte d'Ivoire, Guinea, Mali, Niger, Nigeria and Chad).
- The Volta River Basin: the Volta Basin Authority (VBA) was established in 2008 and includes six States (Benin, Burkina Faso, Côte d'Ivoire, Mali, Ghana and Togo).

A RBO is also being developed for the Comoé, Bia and Tanoé river basins. A programme of activities has been approved by the Council of Ministers, and the Comoé-Bia-Tanoé Basin Authority will be formally established once a Conference of the Heads of State and Government takes place. No RBO currently exists for the Sassandra, Cavalla and Nuon rivers.

For the river basins where no RBOs exists, data and information are exchanged through the respective Ministries of Foreign Affairs. Usually, experts and diplomats from the States in question arrange *ad hoc* meetings to address a particular issue.

Where RBOs are in place, data and information are mainly exchanged through the RBO. Information technology platforms for data collection are available at the level of each State member of the RBO. Data on climate, hydrology, socioeconomics, and so on are provided by each State as an input to the RBO database. The RBOs disseminate hydrological, environmental, meteorological and socioeconomic information among Member States. For instance, SATH-NBA is a 'satellite-based water monitoring and flow forecasting system for the Niger River Basin', which makes data available for experts in real time. Information from this processed data concerning the level of surface waters (floods and droughts) is transmitted to the Member States.

At the RBO level, information exchange also occurs through the management bodies, such as the Conference of the Heads of States and Governments (normally held biannually), the Council of Ministries (normally held annually), and the Technical Committee of Experts. Another form of data and information exchange takes place at the regional level through the Economic Community of West African States (ECOWAS). The ECOWAS Water Resources Coordination Centre (WRCC) collects annual data on water resources, drinking-water, hygiene and sanitation, and makes this available to Member States and the general public through its online Africa Water Sector and Sanitation Monitoring and Reporting System (WASSMO) database.

### Box 16. Experience of data and information exchange between Ghana and Volta Basin States

The Volta River Basin is shared between Ghana, Benin, Burkina Faso, Côte d'Ivoire, Mali and Togo, and jointly managed through the Volta Basin Authority (VBA). Over 80 per cent of the basin is within Burkina Faso and Ghana.

Data-sharing between Ghana and the other riparian States takes three forms.

Firstly, Ghana and Burkina Faso have established a seasonal data-sharing initiative to minimize the impacts from flooding. In August 2007, a 50-year flood event occurred in Ghana, which was aggravated by the opening of the Bagre Dam floodgates in Burkina Faso. Floods have occurred every year except 2011, 2013 and 2017. The Joint Technical Committee on Integrated Water Resources Management (JTC-IWRM) was set up in 2005, and following the 2007 floods it agreed to exchange information. Accordingly, *La Société Nationale d'électricité du Burkina Faso* (SONABEL) transmits information on the water levels of the Bagre and Kompienga dams on a daily basis during the rainy season every year. This information is transmitted to key local government, water and disaster management institutions in Ghana.

Secondly, Ghana requests for or provides specific data to other riparian States for specific purposes. For instance, Ghana requested and received daily stream flow discharges from Burkina Faso for flood hazard assessment and to develop the Flood Early Warning System (FEWS) for the White Volta.

Thirdly, Ghana submits hydrological data to the VBA upon demand, which feeds into the Regional Hydrological Database and operates the Volta Basin Information System. This was initiated in 2012 through the Volta-HYCOS programme.



Volta River Estuary

### Template for reporting: section II, questions 7 and 8

7. Do the riparian States carry out joint monitoring in the transboundary basin, sub-basin, part of a basin or group of basins? [70] [71] [72]

Yes /No

(a) If yes, what does the joint monitoring cover?

	Hydrological	Ecological	Chemical
Border surface waters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surface waters in the entire basin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surface waters on the main watercourse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surface waters in part of the basin please describe [fill in]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transboundary aquifer(s) (connected or unconnected) [73]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aquifer(s) in the territory of one riparian hydraulically connected to a transboundary river or lake [74]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(b) If joint monitoring is carried out, how is this done?

National monitoring stations connected through a network  
or common stations

*Please describe:* [fill in]

Joint and agreed methodologies

*Please describe:* [fill in]

Joint sampling

*Please describe:* [fill in]

Common monitoring network

*Please describe:* [fill in]

Common agreed parameters

*Please describe:* [fill in]

(c) Please describe the main achievements regarding joint monitoring, if any: [fill in]

(d) Please describe any difficulties experienced with joint monitoring: [fill in]

8. Do the riparian States carry out joint assessment of the transboundary basin, sub-basin, part of a basin or group of basins? [75]

Yes /No

*If yes, please provide the date of the last or only assessment, the frequency and scope (e.g. surface waters or groundwaters only, pollution sources, etc.) of the assessment, and assessment methodology applied:* [fill in]

[70] For a definition of ‘joint monitoring’ see note [38] above. For a definition of ‘joint assessment’, see note [75] below.

[71] The Water Convention provides that ‘Riparian Parties shall establish and implement joint programmes for monitoring the conditions of transboundary waters, including floods and ice drifts, as well as transboundary impact’ (Art. 11). The *Guide to Implementing the Water Convention* identifies several basic elements of a joint monitoring programme, including: i) the objectives or needs to be achieved in terms of policy relevant information to be obtained; ii) the identification of monitoring sites; iii) the selection of determinants for surface water, groundwater, suspended solids and sediments; iv) sampling frequency; and v) sampling and analytical methods (UNECE, 2013, pp. 80–82).

[72] While other questions ask whether joint monitoring is provided for in an agreement or arrangement (section II, question 2(d)), or within the tasks and activities of a joint body or mechanism (section II, question 3(g)), this question asks whether joint monitoring *actually* takes place within the basin(s), sub-basin or part of a basin irrespective of whether or not an agreement or arrangement is in place, or a joint body or mechanism has been established.

[73] For an explanation of different types of aquifers, see notes [9]

[74] For an explanation of different types of aquifers, see notes [9]

[75] The Water Convention provides that ‘the Riparian Parties shall, at regular intervals, carry out joint or coordinated assessments of the conditions of transboundary waters and the effectiveness of measures taken for the prevention, control and reduction of transboundary impact’ (Art. 11(3)). **Joint monitoring is a critical prerequisite for carrying out such assessments** and in the identification of the magnitude of any water-related problems (UNECE, 2006, p. 1). See note [38] for a definition of ‘joint monitoring’. In turn, ‘**assessments**’ aim to consider ‘the current state of water quantity and quality and their variability in space and time, including appraisals of the hydrological, morphological, physiochemical, chemical, biological and/or microbiological conditions in relation to reference conditions, human health effects and/or the existing or planned uses of waters’ (UNECE, 2006, p. 3).

### Box 17. Monitoring of the North Western Sahara Aquifer System

The North Western Sahara Aquifer System (SASS) shared between Algeria, Tunisia and Libya is the second largest aquifer in Africa with reserves estimated at more than 50,000 billion m<sup>3</sup>. The aquifer system covers an area of over 1 million km<sup>2</sup> of which 700,000 km<sup>2</sup> is situated in Algeria (68%), 250,000 km<sup>2</sup> in Libya (24%), and 80,000 km<sup>2</sup> in Tunisia (8%).

A consultation mechanism for the sustainable exploitation of SASS was agreed upon by the three countries and has been in operation since 2007. It is funded by the three countries and temporarily housed at the Sahara and Sahel Observatory (OSS) (<http://www.oss-online.org>). The mechanism is considered an international reference for the peaceful management of transboundary waters.

At the operational level the SASS mechanism is structured around a Council of Ministers in charge of water resources, national focal points, and a coordination structure at the level of the OSS, the chairing of which rotates between the countries. Through the SASS mechanism, the three countries have been able to implement projects to build trust, exchange data and information, and deepen their collective understanding of the aquifer system. Three key components of this cooperation have been: i) a component on hydrogeology and system information; ii) a mathematical model; and iii) the consultation mechanism.



Douz Oasis, Tunisia

An important feature of this work in terms of joint monitoring and assessment has been the development of a network of piezometers, with a particular focus on ‘risk zones’ in the Deb Deb region along the two Algerian-Libyan and Algerian-Tunisian borders. The introduction of this monitoring network has provided the countries with greater knowledge and understanding of the aquifer system and the pressures placed on it due to intense exploitation, which has seen the pressure drop in the artesian boreholes with a significant drop in water levels for drilling operated by pumps.

### Template for reporting: section II, question 9

9. Have the riparian States agreed to use joint water quality standards? [76] [77]

Yes /No

*If yes, what standards have been applied, e.g. international or regional standards (please specify which), or have national standards of the riparian States been applied?* [fill in] [78]

[76] For water quality standards to be considered ‘joint’, the riparian States should agree to implement the same, or at least comparable, water quality standards.

[77] This question can be seen as an extension of section II, question 2(d), and question 3(g), which asks whether water quality (and the elaboration of water quality objectives) is a topic of cooperation in an agreement or arrangement and/or a task of a joint body or mechanism. The responses to these questions should therefore be consistent. For example, riparian States may have agreed to use joint water quality standards within the text of an agreement or arrangement itself.

[78] Water quality standards may be established to protect human health and aquatic life. For instance, the World Health Organization produces international norms on water quality and human health in the form of guidelines that are used as a basis for regulation and standard-setting at the national level (WHO, 2017). Additionally, the 1999 UNECE-WHO/Europe Protocol on Water and Health obliges its Parties to establish national and local targets for the quality of drinking water and the quality of discharges, as well as for the performance of water supply and waste-water treatment.

See [https://www.unece.org/env/water/pwh\\_text/text\\_protocol.html](https://www.unece.org/env/water/pwh_text/text_protocol.html)

### Template for reporting: section II, question 10

10. What are the measures implemented to prevent or limit the transboundary impact of accidental pollution? [79]

Notification and communication

Coordinated or joint early warning or alarm system for accidental water pollution

Other (*please list*): [fill in] [80]

No measures

*If not, why not? What difficulties does your country face in putting in place such measures?:* [fill in]

[79] The Water Convention requires its Parties to take all appropriate measures to ensure that ‘the risk of accidental pollution is minimized’ (Art. 3(1)(l); see UNECE, 2013, p. 57). Along similar lines, the Watercourses Convention requires watercourse States to notify potentially affected States and competent international organizations of any emergency originating within its territory as a result of *inter alia* human conduct, and to develop joint contingency plans for responding to such emergencies (Art. 28 under ‘Emergency situations’).

[80] Other measures might include joint contingency plans and any arrangements with international organizations.

### Box 18. International Warning and Alarm Plan of the International Commission for the Protection of the Rhine

In 1986, an agrochemical warehouse fire at Sandoz in Switzerland resulted in tons of pollutants entering the Rhine river, which in turn took a massive toll on the river system. Aquatic life downstream was severely affected and drinking-water works along a 900 km stretch of the Rhine had to cease water intake. In order to address such accidents, the Rhine or the International Commission for the Protection of the Rhine established an International Warning and Alarm Plan Rhine (IWAP) in 1986. The IWAP consists of several international main warning centres in France, Germany, the Netherlands and Switzerland, with each country having clear determined areas of responsibility for monitoring and alerting key agencies of any emergency situations, operational 24 hours a day. In addition, an alarm model for the Rhine and its tributaries has been developed in order to detect and predict pollutant waves, with the alarm system regularly tested.

For further information see: <https://www.iksr.org/en/topics/pollution/international-warning-and-alarm-plan/>



### Template for reporting: section II, question 11

11. What are the measures implemented to prevent or limit the transboundary impact of extreme weather events and climate change? [81]

Notification and communication

Coordinated or joint alarm system for floods [82]

Coordinated or joint alarm system for droughts [83]

Joint climate change adaptation strategy [84]

Joint disaster risk reduction strategy [85]

Other (*please list*): [fill in] [86]

No measures

*If not, why not? What difficulties does your country face in putting in place such measures?:* [fill in]

[81] Extreme weather events and the impacts of climate change might induce ‘flood or ice conditions, water-borne diseases, siltation, erosion, salt-water intrusion, drought or desertification’ (see Art. 27, Watercourses Convention).

[82] A coordinated or joint alarm system for droughts might include basin States defining a common ‘drought of record’ for the basin, i.e. the worst drought since the gathering of flood-related data by States began. See the Drought Risk in the Danube Region (DriDanube) project (<http://www.interreg-danube.eu/approved-projects/dridanube>), which aims to increase the capacity of the Danube region to manage drought-related risks by helping all the stakeholders involved in drought management become more efficient during a drought emergency response, while better preparing for the next drought.

[83] See for example the Flood Forecasting and Warning System (FFWS) in the Sava River Basin, ([https://www.savacommission.org/project\\_detail/24/1](https://www.savacommission.org/project_detail/24/1)).

[84] Key elements of a climate change adaptation strategy, including examples, can be found in *Guidance on Water and Adaptation to Climate Change* (UNECE, 2009). One such example is the Climate Change Adaptation Strategy for the Danube River Basin (<https://www.icpdr.org/main/activities-projects/climate-change-adaptation>).

[85] For further guidance on disaster risk reduction strategies within a transboundary context, see *Words into Action Guidelines* (UN, 2018b).

[86] Other measures might include joint monitoring of low water levels.

[87] The Water Convention provides that ‘If a critical situation should arise, the Riparian Parties shall provide mutual assistance upon request’, and ‘the Riparian Parties shall elaborate and agree upon procedures for mutual assistance addressing, inter alia, the following issues: a) The direction, control, coordination and supervision of assistance; b) Local facilities and services to be rendered by the Party requesting assistance, including, where necessary, the facilitation of border-crossing formalities; c) Arrangements for holding harmless, indemnifying and /or compensating the assisting Party and/or its personnel, as well as for transit through territories of third Parties, where necessary; d) Methods for reimbursing assistance services’ (Art. 15; see also UNECE, 2013, pp. 90–92).

[88] The forum that procedures take may vary. Riparian Parties may include procedures for mutual assistance within: i) a section of an agreement or arrangement on water cooperation; ii) as a self-standing agreement on mutual assistance; iii) as a protocol or regulation to an existing agreement or a general agreement on civil protection; and/or iv) within the agreed tasks of a joint body or mechanism (see UNECE, 2013, para. 323).

### Box 19. Joint Finnish-Russian Action Programme on the Utilisation of Frontier Waters on Risk Management in Case of Adverse Hydrological Conditions in the Vuoksi River Basin District

The Joint Finnish-Russian Commission on the Utilisation of Frontier Waters (the Commission) has developed a Risk Management Plan in case of Adverse Hydrological Conditions in the Vuoksi River Basin District (Vuoksi Risk Management Plan) with the aim of mitigating the impacts of climate change. The main tasks of the Vuoksi Risk Management Plan are: i) the acquisition of the reliable hydrological data and enhancing the accuracy of hydrological forecasts; ii) the specification of areas potentially impacted by floods and drought, and the use of such information in the guidance of urban and rural planning and construction; iii) the drawing up of flood maps; iv) the preparation of a joint assessment methods for damage due to floods and droughts; v) the improvement of data and information exchange; and vi) the development of discharge practice under an agreed 'Discharge Rule' – whereby discharges are carried out in a way that the total damage in the river basin to both Parties is minimised.



Vuoksi River at the border between Finland and Russia

#### Template for reporting: section II, question 12

12. Are procedures in place for mutual assistance in case of a critical situation? [87] [88] [89] [90]

Yes /No

*If yes, please provide a brief summary:* [fill in] [91]

[89] **'Mutual assistance'** can be defined as water management related activities that are conducted by one State at the request of another State, either free of charge or for payment, including technical and human measures (e.g. sand bags for flood protection, providing technical equipment, the pumping of water and ice breaking).

[90] A **'critical situation'** can be defined as a water management related emergency causing danger or risk that threatens human life and/or material loss or damage (e.g. flood, drought, accidental pollution, ice block formation, and so on).

[91] Where procedures are only in place at the sub-basin level or within part of the basin, this should be stated in the summary.

### Box 20. Practical application of Minute 323 under the 1944 Treaty between Mexico and the United States of America

The 1944 Treaty on the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande is the legal instrument that regulates the relationship between Mexico and the U.S. of the transboundary Colorado, Grande and Tijuana rivers. A third of the flow in the main channel of the Rio Grande is allocated to the U.S., provided that this third is not less than 431,721 Mm<sup>3</sup> annually as an average amount in cycles of five consecutive years. Mexico annually receives 1,850,234 Mm<sup>3</sup> from the Rio Colorado.

Under the framework of Minute 323 and as a result of an extensive drought, Mexico and the U.S. jointly developed the **Binational Water Scarcity Contingency Plan in the Colorado River Basin** with the purpose of assuring a water supply to 40 million Americans and 3 million Mexicans. The plan entered into force on 20 May 2019.

On 31 May 2019, the U.S. Commissioner of the International Boundary and Water Commission (IBWC) notified the Mexican Commissioner that the conditions had been met for Section IV of Minute 323 to take effect, namely the Binational Water Scarcity Contingency Plan. Specific details on the implementation of the plan are specified in a Joint Report of the Principal Engineers, which was drafted by delegations from both countries and signed by both sections of the IBWC on 9 July 2019. The Bureau of Reclamation forecasts that by 1 January 2020 the water level of Lake Mead will be 1,080.40 feet above sea level (330 m a.s.l), which according to Minute 323 will apply 'Volunteer Savings' criteria that will decrease allocations to Mexico from the Colorado River by 51 Mm<sup>3</sup> in 2020. This volume will be recovered by Mexico when conditions improve, i.e. a joint study projects an elevation of 1,000 ft a.s.l (305 m a.s.l) in the water level of Lake Mead for the subsequent year.

Among other actions to preserve and increase the water availability of the Colorado River, an investment of at least US\$ 31.5 million is being considered for the construction of hydro-agricultural infrastructure to help increase water use efficiency. In exchange, Mexico must deliver 283 Mm<sup>3</sup> of water savings by 31 December 2026 of which 135 Mm<sup>3</sup> will be for use by the U.S., 86 Mm<sup>3</sup> for environmental uses in the Colorado River Delta, and 62 Mm<sup>3</sup> for the benefit of all system users.

For more information go to <http://www.cila.gob.mx/actas/323.pdf>



Rio Grande River at the border between Mexico and the USA

### Template for reporting: section II, question 13

13. Are the public or relevant stakeholders involved in transboundary water management in the basin, sub-basin, part of a basin or group of basins? [92] [93]

Yes /No

*If yes, how? (please tick all applicable)*

- |   |                          |
|---|--------------------------|
| Stakeholders have observer status in a joint body or mechanism                            | <input type="checkbox"/> |
| Stakeholders have an advisory role in the joint body                                      | <input type="checkbox"/> |
| Stakeholders have a decision-making role in the joint body                                | <input type="checkbox"/> |
| <i>If yes, please specify the stakeholders for the joint body or mechanism: [fill in]</i> |                          |
| Intergovernmental organizations   | <input type="checkbox"/> |
| Private sectors organizations or associations   | <input type="checkbox"/> |
| Water user groups or associations   | <input type="checkbox"/> |
| Academic or research institutions   | <input type="checkbox"/> |
| Other non-governmental organizations  | <input type="checkbox"/> |
| General public  | <input type="checkbox"/> |
| Other (please specify): [fill in]   |                          |
| Availability of information to the public [94]  | <input type="checkbox"/> |
| Consultation on planned measures or river basin management plans <sup>4</sup> [95]        | <input type="checkbox"/> |
| Public involvement  | <input type="checkbox"/> |
| Other (please specify): [fill in] [96]  |                          |

<sup>4</sup> Or, where applicable, aquifer management plans.

[92] The Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) defines **‘the Public’** as ‘one or more natural or legal persons, and, in accordance with national legislation or practice, their associations, organizations or groups’ (Art. 2(4)). The Convention goes on to define, ‘public concerned’, which can be considered synonymous as the term ‘stakeholders’ as being, ‘the public affected or likely to be affected by, or having an interest in, the environmental decision-making’ (Art. 2(5)).

[93] **What does ‘involvement’ cover?** Question 13, through the tick box options, highlights the main ways in which the public or relevant stakeholders may be involved in transboundary water management. *The Aarhus Convention: An Implementation Guide* observes that ‘the level of involvement of the public in a particular process depends on a number of factors, including the expected outcomes, its scope, who or how many will be affected, whether the result settles matters on a national, region or local level, and so on’. The guide goes on to explain that ‘those who are most affected by the outcome of the decision-making or policymaking should have a greater chance to influence the outcome’ (UNECE, 2014b, p. 119; see also pp. 57–58).

[94] The Water Convention obliges Riparian Parties to ‘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; see also UNECE, 2013, pp. 93–97).

[95] See also Box 20 on the Mekong River example. Responses may also relate to aquifer management plans.

[96] For example, how is gender mainstreaming taken into account when considering participation of the public and relevant stakeholders in decision-making.

### Box 21. Procedures for Notification, Prior Consultation and Agreement (PNPCA) and stakeholder participation in the Mekong River Basin

The PNPCA was developed by the Parties (Cambodia, Lao PDR, Thailand and Vietnam) to support the implementation of the 1995 Mekong Agreement. 'Notification' requires that Member States are notified of the details of a proposed project before commencement of its proposed use; 'prior consultation' involves a six-month process of technical evaluation and formal consultations that allow Member States an opportunity to assess any potential transboundary impact on ecosystems and livelihoods, and to recommend measures to address those issues prior to water use; and 'specific agreement' requires a thorough negotiation to achieve consensus on the terms and conditions of a proposed project among all Member States prior to the proposed use of the water.

During the prior consultation procedure, which applies to intra-basin uses during the dry season and inter-basin uses during the wet season, public consultations are held in order to hear the concerns and views of the public and interested parties. These consultations are conducted by the Mekong River Commission (MRC) secretariat and the National Mekong Committees of each member State (the governmental body that coordinates the MRC's work at a national level).

For more information go to <http://www.mrcmekong.org/topics/pnpca-prior-consultation/>



Floating market on the Mekong River, Soc Trang province, Vietnam

### Box 22. Stakeholder involvement in the Senegal River Basin

National Coordination Committees (NCCs) and Local Coordination Committees (LCCs) have been established to strengthen stakeholder involvement in the Senegal River Basin. The NCC and LCCs fall under the institutional framework of the Organization for the Development of the Senegal River Basin (OMVS) and its programme for the Mitigation and Monitoring of Environmental Impacts (MMEI). The MMEI programme defines, in the form of an action programme, a set of measures to correct, optimize and monitor environmental impacts on the Senegal River. It was adopted at the 45<sup>th</sup> Ordinary session of OMVS Council of Ministers held on 20 and 21 April 1998 in Nouakchott, Mauritania.

The LCCs are legally constituted structures within each riparian State whose main responsibilities are: i) to undertake broad-based consultations with local communities, local authorities, and other actors to facilitate consensus, conflict resolution, cooperation and synergies; ii) inform, sensitize and engage all components of civil society in the proper execution of projects; iii) monitor the implementation of OMVS programmes at the local level; iv) ensure compliance with the decisions and recommendations taken by relevant bodies (steering committee, NCC, and so on); and v) serve as the interface between the populations, the national authorities and OMVS. In each State, LCCs are supervised by a NCC with the responsibility to: i) facilitate national consultation to ensure the successful implementation of projects; ii) ensure the support of all stakeholders; iii) eliminate the risk of delays to project implementation; iv) promote the participation and exchange of ideas between the various ministerial departments concerned at the national level; and v) serves as the interface between national and regional actors.



Pelicans, Djoudj national park, Senegal River shared by Mali, Mauritania, Senegal

## Template for reporting: section III

### SECTION III

#### III. Water management at the national level

In this section, you are requested to provide general information on water management at the national level as it relates to transboundary waters. Information on specific transboundary basins, sub-basins, part of basins and groups of basins, should be presented in section II and not repeated here.

1. (a) Does your country's national legislation, policies, action plans and strategies refer to measures to prevent, control and reduce any transboundary impact? [97] [98]

Yes /No

*If yes, please briefly describe the main national laws, policies, action plans and strategies [fill in] [99] [100] [101]*

- (b) Does your country's legislation provide for the following principles? [102]

Precautionary principle      Yes /No

Polluter pays principle      Yes /No

Sustainable development      Yes /No

User pays principle      Yes /No

*If yes, please briefly describe how these principles are implemented at the national level: [fill in] [103]*

Include reference here to how this links to the transboundary level;

[97] The Water Convention stipulates that its Parties take 'all appropriate measures to prevent, control and reduce any transboundary impact' (Art. 2(1); see also UNECE, 2013, pp. 19–21); many of these measures must be adopted at the national level. Laws, policies, action plans and strategies are therefore fundamental to ensuring that an effective system is in place at the national level in order to meet any commitments contained in international agreements or arrangements for transboundary waters, and may make reference to principles such as integrated water resources management and sustainable water management.

[98] Question 1(a) should be answered 'yes' where there is either an explicit reference to transboundary waters or impacts within the national laws, policies, action plans and strategies of a State, or transboundary waters are implicitly covered by more general national laws.

[99] The brief description should highlight any national laws, policies, action plans and strategies that explicitly refer to transboundary impact, or any implicit provisions related to transboundary impact. For example, national laws may make reference to transboundary waters in a number of ways, including: i) providing a mandate to government agencies or bodies to negotiate agreements and arrangements on transboundary waters; ii) empowering institutions to formulate policy and guidance related to transboundary waters; iii) providing the main principles of transboundary water-sharing that are adhered to by a State; and iv) incorporating international commitments related to transboundary waters into a State's planning and decision-making process related to, for example, water abstraction licenses or concessions, and wastewater discharge permits (see Burchi, 2016, pp. 43–44). For examples of national legislation explicitly addressing transboundary waters, see Part VII, Zambia Water Resources Management Act, 2011; Article 7, Bangladesh Water Act, 2013; Law of the Kyrgyz Republic on Interstate Use of Water Objects, Water Resources and Water Management Constructions, 2001; and Part 6, Namibia Water Resources Management Act, 2013. **Where national laws, policies, action plans and strategies do not explicitly address transboundary impact, then key laws, policies, action plans that implicitly relate to transboundary issues should be described.**

[100] In federal States such as Argentina, Belgium, Brazil, India and the United States, there may be national and/or state or provincial and municipal laws, policies, action plans and strategies related to water. In such circumstances, any differences concerning transboundary waters in the laws, policies, action plans and strategies at the federal, provincial or state level should be explained.

[101] Where they differ, the main laws, policies, actions plans and strategies related to groundwater and surface water management should be described separately.

[102] The response to question 1(b) should consider whether the precautionary principle, polluter pays principle, sustainable development and user pays principles are incorporated into national laws, policies, actions plans and strategies related to transboundary water management. For further information on the application of the aforementioned principles within a transboundary context see *Guide to Implementing the Water Convention* (UNECE, 2013).

[103] The description should focus on how the principles are incorporated into national laws, policies, action plans and strategies related to transboundary water management.

### Template for reporting: section III, question 1

(c) Does your country have a national licensing or permitting system for wastewater discharges and other point source pollution? (e.g. in industry, mining, energy, municipal, wastewater management or other sectors)? [104]

Yes /No

*If yes, for which sectors?*

Industry

Mining

Energy

Municipal

Livestock raising

Aquaculture

Other (please list): [fill in]

*Please briefly describe the licensing or permitting system, indicating whether the system provides for setting emission limits based on best available technology?* [105] [106]

*If yes, for which sectors? (please list):* [fill in]

*If not, please explain why not (giving the most important reasons) or provide information if there are plans to introduce a licensing or permitting system:* [fill in]

[104] The Water Convention obliges the Parties to develop, adopt and implement national measures in order to ensure that 'transboundary waters are protected against pollution from point sources through the prior licensing of waste-water discharges by the competent national authorities' (Art. 3(1)(b)). See also *Guidelines on Licensing Waste-water Discharges from Point Sources into Transboundary Waters* (UNECE, 1996).

[105] The regulatory system for licensing or permitting should briefly be described here, including the process by which applications are submitted, e.g. any criteria or principles for approving or rejecting permits (see also note [106]), as well as the process by which licenses or permits are enforced, or where necessary, revoked. However, **the monitoring and control of authorized discharges should be described in response to question 1(d) below.**

[106] **'Best available technology'**, as defined in Annex I of the Water Convention, means 'the latest stage of development of processes, facilities or methods of operation which indicate the practical suitability of a particular measure for limiting discharges, emissions and waste. In determining whether a set of processes, facilities and methods or operation constitute the best available technology in general or individual cases, special consideration is given to: a) Comparable processes, facilities or methods of operation which have recently been successfully tried out; b) Technological advances and changes in scientific knowledge and understanding; c) The economic feasibility of such technology; d) Time limits for installation in both new and existing plants; e) The nature and volume of the discharges and effluents concerned; f) Low and non-waste technology'. Annex I also notes that 'what is "best available technology" for a particular process will change with time in the light of technological advances, economic and social factors, as well as in the light of changes in scientific knowledge and understanding'. See also *Guide to Implementing the Water Convention* (UNECE, 2013, pp. 41–45).

### Template for reporting: section III, question 1

(d) Are the authorized discharges monitored and controlled? [107]

Yes /No

*If yes, how? (Please tick the ones applicable):*

Monitoring of discharges

Monitoring of physical and chemical impacts on water

Monitoring of ecological impacts on water

Conditions on permits

Inspectorate

Other means (*please list*): [fill in] [108]

*If your country does not have a discharge monitoring system, please explain why not or provide information if there are plans to introduce a discharge monitoring system:* [fill in]

[107] Discharges are authorized when a competent authority provides a water user with a permit or license, which will set out the conditions and limits of that water use and its impacts. These permissible waste-water discharges should be monitored and controlled through a programme that considers the volume of waste-water produced per time unit, the composition of waste-water, discharge patterns, and the characteristics of the receiving bodies (UNECE, 1996, p. 35).

[108] For example, self-monitoring by license or permit holders may be part of a monitoring system for point sources of pollution (UNECE, 1996, p. 35).

### Template for reporting: section III, question 1

(e) What are the main measures which your country takes to reduce diffuse sources of water pollution on transboundary waters (e.g., from agriculture, transport, forestry or aquaculture)? The measures listed below relate to agriculture, but other sectors may be more significant. Please be sure to include these under "others": [109]

#### Legislative measures

Norms for uses of fertilizers

Norms for uses of manure

Permitting system

Bans on or norms for use of pesticides

Others (*please list*): [fill in]

**Economic and financial measures**

Monetary incentives [110]

Environmental taxes (such as fertilizer taxes)

Others (*please list*): [fill in]

**Agricultural extension services** [111]

**Technical measures***Source control measures*

Crop rotation

Tillage control

Winter cover crops

Others (*please list*): [fill in]

*Other measures*

Buffer/filter strips

Wetland reconstruction

Sedimentation traps

Chemical measures

Others (*please list*): [fill in]

**Other types of measures**

*If yes, please list:* [fill in]

- (f) What are the main measures which your country takes to enhance water resources allocation and use efficiency?

*Please tick as appropriate (not all might be relevant)*

A regulatory system regarding water abstraction

Monitoring and control of abstractions

Water rights are defined [112]

Water allocation priorities are listed

Water-saving technologies

Advanced irrigation techniques

Demand management activities

Other means (please list)

- (g) Does your country apply the ecosystems approach? [113] [114]

Yes /No

*If yes, please describe how:* [fill in] [115]

- (h) Does your country take specific measures to prevent the pollution of groundwaters? [116]

Yes /No

*If yes, please briefly describe the most important measures:* [fill in]

[109] Diffuse pollution may come from a range of other sources, including urban land, forestry, atmospheric deposition or rural dwellings.

[110] For example, rebates for lowering pollution levels or subsidies for moving to best environmental practices.

[111] Extension services are usually an administrative division of government that work with farmers to facilitate programmes and projects for change, such as improved pollution control, reduction and prevention practices.

[112] **'Water rights'**, in a broad sense, encompasses, 'a variety of rights to access and use water, including those created by common law, and by administrative licensing regimes' (Hendry, 2014, p. 38).

[113] The **'ecosystems approach'** is defined as 'a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way' (Decision V/6, Biodiversity Convention, 2000).

[114] Question 1(g) seeks to determine if an ecosystem approach is embedded within any national law and policy framework for water resources management.

[115] Where available, the relevant parts of a national law and policy framework for water resources management in support of the ecosystems approach should be described here.

[116] The Water Convention obliges its Parties to ensure that 'additional specific measures are taken to prevent the pollution of groundwaters' (Art. 3(1)(k)). See also UNECE, *Model Provisions on Transboundary Groundwaters*, which obliges Parties to 'take appropriate measures to prevent, control and reduce the pollution of transboundary groundwaters', which include '(a) The establishment of protection zones, in particular in the most vulnerable/ critical parts of the recharge area of groundwaters, especially of groundwaters used or intended to be used for the provision of drinking water; (b) The adoption of measures to prevent or limit the release of pollutants into groundwaters, such as negative influences on groundwater from point sources; (c) The regulation of land uses, including intensive agricultural practices, to combat pollution of groundwater from nitrates and plant protection agents; (d) The definition of groundwater quality objectives and the adoption of groundwater quality criteria' (Provision 5 and commentary, UNECE, 2014a, pp. 9–12). See also the EU Groundwater Directive (2006/118/EC), which requires Member States to establish a regime 'which sets groundwater quality standards and introduces measures to prevent or limit inputs of pollutants into groundwater'; and 2008 ILC Draft Articles on the Law of Transboundary Aquifers (with commentaries), Art. 12, ILC, 2008.

### Template for reporting: section III, question 2

2. Do your national laws require transboundary environmental impact assessment (EIA)? [117] [118]

Yes /No

*If yes, please briefly describe the legislative basis and any related implementing procedures.* [fill in] [119]

*If not, do other measures provide for transboundary EIA?* [fill in] [120]

[117] The Water Convention obliges Parties to apply EIA and other means of assessment to prevent, control and reduce transboundary impact (Art 3(1)(h)), and for any joint body or mechanism 'to participate in the implementation of environmental impact assessments relating to transboundary waters' (Art. 9(2)(j)). Parties to the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) are also obliged to undertake an EIA in case of planned activities likely to have a transboundary impact, and in so doing, establish a framework for the participation of any potentially affected Parties in the process before a final decision on the project is made (see UNECE,

2013, pp. 53–55). In the *San Juan River Cases*, the International Court of Justice has also observed that pursuant to customary international law ‘a State’s obligation to exercise due diligence in preventing significant transboundary harm requires that State to ascertain whether there is a risk of significant transboundary harm prior to undertaking an activity having the potential adversely to affect the environment of another State. If that is the case, the State concerned must conduct an environmental impact assessment’ (International Court of Justice, 2015, para. 153).

[118] While most States have EIA legislation in place, question 2 asks more specifically whether national legislation is in place that either explicitly or implicitly requires a *transboundary* EIA.

[119] The description of the legislative basis should highlight the key elements of an EIA process that applies to projects that may have a transboundary impact, including any requirements concerning the content of an EIA. For example, as part of the EIA, is there a requirement to assess environmental, social, economic and/or cultural impacts? Where it is in place, States may also wish to highlight a Strategic Environmental Assessment (SEA) framework that applies to transboundary waters. As opposed to EIAs that relate to specific projects, SEAs relate to the preparation of plans and programmes, and can therefore capture cumulative impacts (See UNECE, 2013, paras. 199–200).

### Template for reporting: section IV, questions 1 and 2

#### IV. Final questions [121]

1. What are the main challenges your country faces in cooperating on transboundary waters?

Differences between national administrative and legal frameworks

Lack of relevant data and information

Difficulties in data and information exchange

Sectoral fragmentation at the national level

Language barrier

Resource constraints

Environmental pressures, e.g. extreme events

Sovereignty concerns

Please list other challenges and/or provide further details: [fill in]

2. What have been the main achievements in cooperating on transboundary waters?

Improved water management

Enhanced regional integration, i.e. beyond water

Adoption of cooperative arrangements

Adoption of joint plans and programmes

Long-lasting and sustained cooperation

Financial support for joint activities

Stronger political will for transboundary water cooperation

Better knowledge and understanding

Dispute avoidance

Stakeholder engagement

Please list other achievements, keys to achieving success, and/or provide concrete examples: [fill in] [122]

[120] ‘Other measures’ might include those contained in bilateral or multilateral agreements or guidelines, see for example, the *Revised Guidelines on Environmental Impact Assessment in a Transboundary Context for Central Asian countries* (UNECE, 2019b).

[121] Questions 1 and 2 offer the opportunity to summarize the responses in the reporting template and to highlight, from a national perspective, the key challenges and opportunities in advancing transboundary water cooperation. While responses to specific questions in sections I–III may be technical, section IV should be completed in a way that is accessible to policymakers and decision-makers.

[122] Concrete examples might be those that show specific improvements as a result of transboundary water cooperation, such as improved water quality or the sharing of benefits.

### Template for reporting: section IV, questions 3, 4 and 5

3. Please indicate which institutions were consulted during the completion of the questionnaire

Joint body or mechanism

Other riparian or aquifer countries

National water management authority

Environment agency/ authority

Basin authority (national)

Local or provincial government

Geological survey (national)

Non-water specific ministries, e.g. foreign affairs, finance,

forestry and energy

Civil society organizations

Water user associations

Private sector

Other (please list): [fill in]

Please briefly describe the process by which the questionnaire was completed: [fill in]

4. If you have any other comments please add them here (*insert comments*): [fill in] [123]

5. Name and contact details of the person(s) who filled out the questionnaire (*please insert*): [fill in]

Date: [fill in]

Signature: [fill in]

[123] Respondents may describe the process by which the template was completed here, such as the organization of a national workshop and/or the establishment of a cross-governmental drafting committee.

This question also offers the opportunity to provide any further explanation to any of the responses given in the previous sections, or to highlight any other aspects of transboundary water cooperation that may not have been already captured.



Hadithah Dam Lake, Euphrates River in Iraq

## REFERENCES

### 1. Agreements, Conventions, Treaties, and other arrangements.

Agreement between the Government of the Federal Republic of Germany and the Government of the Republic of Poland on common improvement of the situation on waterways in the German-Polish border area (flood control, drainage and navigation conditions), 27 April 2015. <http://extwprlegs1.fao.org/docs/pdf/bi-146490.pdf> [In German]

Agreement between the Federal Republic of Nigeria and the Republic of Niger concerning the equitable sharing in the development, conservation and use of their common water resources, 18 July 1990. <http://www.fao.org/3/w7414b/w7414b10.htm>

Agreement between the Government of the Republic of Kazakhstan and the Government of the People's Republic of China on Cooperation in the Use and Protection of Transboundary Rivers, 12 September 2001. [http://www.cawater-info.net/library/eng/l/kazakhstan\\_china.pdf](http://www.cawater-info.net/library/eng/l/kazakhstan_china.pdf)

Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, 5 April 1995. <http://www.mrcmekong.org/assets/Publications/policies/agreement-Apr95.pdf>

Agreement on the Establishment of the Zambezi Watercourse Commission, 13 July 2004 (entered into force 19 June 2011). [http://www.zambezicommission.org/sites/default/files/publication\\_downloads/zamcom-agreement.pdf](http://www.zambezicommission.org/sites/default/files/publication_downloads/zamcom-agreement.pdf)

Agreement on the Nile River Basin Cooperative Framework, 14 May 2010 (not yet in force). <https://www.nilebasin.org/documents-publications/30-cooperative-framework-agreement/file>

Arrangement on the Protection, Utilization and Recharge of the Franco-Swiss Genevois Aquifer, 18 December 2007. <https://www.internationalwaterlaw.org/documents/regionaldocs/2008Franko-Swiss-Aquifer.pdf> [In French].

Comprehensive Border Integration, Development and Neighbourhood Agreement between the Republic of Peru and the Republic of Ecuador, 26 October 1998. <http://www4.congreso.gob.pe/comisiones/1999/exteriores/libro1/2avolum/04acuer.htm> [In Spanish].

Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, 25 June 1998 (Aarhus Convention) (entered into force 30 October 2001). <https://www.unece.org/env/pp/treatytext.html>

Convention on Biological Diversity, 5 June 1992 (entered into force 29 December 1993). <http://www.cbd.int/convention/text/>

Convention on Cooperation for the Protection and Sustainable Use of the Danube River, 29 June 1994 (entered into force October 1998). <https://www.icpdr.org/flowpaper/viewer/default/files/DRPC%20English%20ver.pdf>

Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), 25 February 1991 (entered into force 10 September 1997). [https://www.unece.org/fileadmin/DAM/env/eia/documents/legaltexts/Espoo\\_Convention\\_authentic\\_ENG.pdf](https://www.unece.org/fileadmin/DAM/env/eia/documents/legaltexts/Espoo_Convention_authentic_ENG.pdf)

Convention on the Cooperation for the Protection and Sustainable Use of the Waters of the Luso-Spanish River Basins, 30 November 1998 (entered into force 17 January 2000). <http://www.cadc-albufeira.eu/es/convenios/descripcion/> [In Spanish].

Convention on the Law of the Non-navigational Uses of International Watercourses (UN Watercourses Convention), 21 May 1996 (entered into force 17 August 2014). [http://legal.un.org/ilc/texts/instruments/english/conventions/8\\_3\\_1997.pdf](http://legal.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf)

Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention), 17 March 1992 (entered into force 6 October 1996). <http://www.unece.org/env/water/text/text.htm>

Convention on the Protection of the Rhine, 12 April 1999 (entered into force 1 January 2003). <https://www.iksr.org/en/icpr/legal-basis/convention/>

Directive 2000/60/EC of the European Parliament and the Council establishing a Framework for Community Action in the Field of Water Policy (EU Water Framework Directive), 22 December 2000. [http://ec.europa.eu/environment/water/water-framework/index\\_en.html](http://ec.europa.eu/environment/water/water-framework/index_en.html)

Framework Agreement on the Sava River Basin, 3 December 2002 (entered into force 29 December 2014). <http://extwprlegs1.fao.org/docs/pdf/mul45452.pdf>

International Agreement on the Protection of the (River) Scheldt, 3 December 2002. <http://extwprlegs1.fao.org/docs/pdf/mul150201.pdf>

Revised Protocol on Shared Watercourses in the Southern African Development Community, 7 August 2000 (entered into force 2013). [https://www.sadc.int/files/3413/6698/6218/Revised\\_Protocol\\_on\\_Shared\\_Watercourses\\_-\\_2000\\_-\\_English.pdf](https://www.sadc.int/files/3413/6698/6218/Revised_Protocol_on_Shared_Watercourses_-_2000_-_English.pdf)

Treaty and Protocol on Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande between the United States of America and Mexico, 3 February 1944 (entered into force 8 November 1945). <https://www.ibwc.gov/Files/1944Treaty.pdf>

Treaty between the Government of the Republic of Moldova and the Cabinet Ministers of Ukraine on Cooperation in the Field of Protection and Sustainable Development of the Dniester River Basin, 29 November 2012 (entered into force 26 June 2017). [https://www.unece.org/fileadmin/DAM/env/water/activities/Dniester/Dniester-treaty-final-EN-29Nov2012\\_web.pdf](https://www.unece.org/fileadmin/DAM/env/water/activities/Dniester/Dniester-treaty-final-EN-29Nov2012_web.pdf)

Tripartite Interim Agreement between the Republic of Mozambique and the Republic of South Africa and the Kingdom of Swaziland for Co-operation on the Protection and Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses, 29 August 2002. <http://www.ecolex.org/server2neu.php/libcat/docs/TRE/Full/En/TRE-001811.doc>

Vienna Convention on the Law of the Treaties, 23 May 1969 (entered into force 27 January 1980). [http://legal.un.org/ilc/texts/instruments/english/conventions/1\\_1\\_1969.pdf](http://legal.un.org/ilc/texts/instruments/english/conventions/1_1_1969.pdf)

## 2. National legislation

Bangladesh Water Act, 2013. <http://warpo.gov.bd/site/page/d8a117d5-526a-4a14-9d77-4f5fa35a4f10/Act> [In Bengali].

Law of the Kyrgyz Republic on Interstate Use of Water Objects, Water Resources and Water Management Constructions of the Kyrgyz Republic, 2001. <http://cis-legislation.com/document.fwx?rgn=78>

Namibia Water Resources Management Act, 2013. <http://www.lac.org.na/laws/2013/5367.pdf>

Zambia Water Resources Management Act, 2011. <https://zambialii.org/node/10688>

### 3. Additional references

- AMCOW (2019). *Africa Water Sector and Sanitation Monitoring and Reporting*. African Ministers' Council on Water. Available at <http://www.africawat-sanreports.org/IndicatorReporting/home>
- Biodiversity Convention (2000). Decision V/6, Ecosystems Approach. In *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Fifth Meeting, Nairobi, 15–26 May 2000*, Annex III, UN Doc. UNEP/CBD/COP/5/23. Available from <https://www.cbd.int/doc/decisions/cop-05/full/cop-05-dec-en.pdf>
- Burchi, Stefano (2016). Linking International Water Law and Domestic Water Law. In *Hydrodiplomacy, Legal and Institutional Aspects of Water Resources Governance: From the international to the domestic perspective*. UNESCO-IHP & Swiss Agency for Development and Cooperation. Paris: UNESCO.
- Dyson, Megan, Ger Bergkamp and John Scanlon, eds. (2008). *Flow – The Essentials of Environmental Flows*. Gland: IUCN.
- Eckstein, Yoram and Gabriel E. Eckstein (2005). Transboundary Aquifers: Conceptual Models for Development of International Law. *Groundwater*, Vol. 43, No. 5, pp. 679–690.
- European Commission (2019). Natura 2000. [http://ec.europa.eu/environment/nature/natura2000/index\\_en.htm](http://ec.europa.eu/environment/nature/natura2000/index_en.htm)
- Hendry, Sarah (2014). *Frameworks for Water Law Reform*. Cambridge: Cambridge University Press.
- International Court of Justice (2010) *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*. <https://www.icj-cij.org/en/case/135/judgments>
- International Law Commission (2008). Draft Articles on the Law of Transboundary Aquifers with commentaries. In ILC, *Yearbook of the International Law Commission*, Vol. II (Pt II). Available from [http://legal.un.org/ilc/texts/instruments/english/commentaries/8\\_5\\_2008.pdf](http://legal.un.org/ilc/texts/instruments/english/commentaries/8_5_2008.pdf)
- McCaffrey, Stephen, C. (2007). *The Law of International Watercourses*. Oxford: Oxford University Press.
- Park, Chris (2012). *A Dictionary of Environment and Conservation*, Oxford: Oxford University Press.
- Ramsar (2018). Implementing environmental flows with benefits for society and different wetland ecosystems in river systems. *Ramsar Policy Brief 4*. Available from [https://www.ramsar.org/sites/default/files/documents/library/rpb4\\_environmental\\_flows\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/library/rpb4_environmental_flows_e.pdf)
- Rieu-Clarke, Alistair, Ruby Moynihan and Bjorn-Oliver Magsig (2012). *UN Watercourses Convention User's Guide*. Available from <https://www.unwatercoursesconvention.org>
- Saruchera, Davison and Jonathan Lautze (2016). Transboundary River Basin Organisation in Africa: assessing the secretariat. *Water Policy*, Vol. 18, No. 5, pp. 1053–1069.
- Tanzi, Attila and Maurizio Arcari (2001). *The United Nations Convention on the Law of International Watercourses: A Framework for Sharing*. The Hague: Kluwer.
- United Nations (2017). General Assembly Resolution, Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development, UN Doc. A/RES/71/313, 10 July 2017.
- United Nations (2018a). *The Sustainable Development Goals Report 2018*. New York: UN. Available from <https://unstats.un.org/sdgs/files/report/2018/TheSustainableDevelopmentGoalsReport2018-EN.pdf>
- United Nations (2018b). *Words into Action Guidelines – Implementation Guide for Addressing Water-Related Disasters and Transboundary Water Cooperation*, UNECE and UN Office for Disaster Risk Reduction. New

- York and Geneva: UN. Available from [https://www.unece.org/fileadmin/DAM/env/water/publications/WAT\\_56/ECE\\_MP.WAT\\_56\\_E\\_web.pdf](https://www.unece.org/fileadmin/DAM/env/water/publications/WAT_56/ECE_MP.WAT_56_E_web.pdf)
- UNECE (1996). *Guidelines on Licensing Waste-Water Discharges from Point Sources into Transboundary Waters*, UN Doc. ECE/CEP/11. Available from <https://www.unece.org/index.php?id=12801>
- UNECE (2005). *Good Practice for Monitoring and Assessment of Transboundary Rivers, Lakes and Groundwaters*. Available from [http://www.unece.org/fileadmin/DAM/env/water/cwc/monit-assess/good\\_practice\\_M&A\\_e.pdf](http://www.unece.org/fileadmin/DAM/env/water/cwc/monit-assess/good_practice_M&A_e.pdf)
- UNECE (2006). *Strategies for Monitoring and Assessment of Transboundary Rivers, Lakes and Groundwaters*. New York and Geneva: United Nations Economic Commission for Europe. Available from [https://www.unece.org/fileadmin/DAM/env/documents/2018/WAT/05May\\_28-30\\_IWRM\\_WGMA/StrategiesM\\_A.pdf](https://www.unece.org/fileadmin/DAM/env/documents/2018/WAT/05May_28-30_IWRM_WGMA/StrategiesM_A.pdf)
- UNECE (2009). *Guidance on Water and Adaptation to Climate Change*, UN Doc. ECE/MP.WAT/30. Available from <https://www.unece.org/index.php?id=11658>
- UNECE (2013). *Guide to Implementing the Water Convention*, UN Doc. ECE/MP.WAT/39. New York and Geneva: United Nations Economic Commission for Europe. Available from <https://www.unece.org/index.php?id=33657>
- UNECE (2014a). *Model Provisions on Transboundary Groundwaters*, UN Doc. ECE/MP.WAT/40. New York and Geneva: United Nations Economic Commission for Europe. Available from <https://www.unece.org/index.php?id=35126>
- UNECE (2014b). *The Aarhus Convention – An Implementation Guide*, 2<sup>nd</sup> edition. Sales No.: E.13.II.E.3. Available from [https://www.unece.org/fileadmin/DAM/env/pp/Publications/Aarhus\\_Implementation\\_Guide\\_interactive\\_eng.pdf](https://www.unece.org/fileadmin/DAM/env/pp/Publications/Aarhus_Implementation_Guide_interactive_eng.pdf)
- UNECE (2017). Decision VIII/1, Reporting under the Convention. In *Report of the Meeting of the Parties on its eighth session, Addendum*, UN Doc. ECE/MP.WAT/54/Add.2, 30 January 2019, pp. 35–55.
- UNECE (2018a). *Progress on Transboundary Water Cooperation under the Water Convention*, UN Doc. ECE/MP.WAT/51. New York and Geneva: United Nations Economic Commission for Europe. Available from <https://www.unece.org/index.php?id=49805>
- UNECE (2018b). *Principles for Effective Joint Bodies for Transboundary Water Cooperation*, UN Doc. ECE/MP.WAT/50. New York and Geneva: United Nations Economic Commission for Europe. Available from [https://www.unece.org/fileadmin/DAM/env/water/publications/WAT\\_Joint\\_Bodies/ECE\\_MP.WAT\\_50\\_Joint\\_bodies\\_2018\\_ENG.pdf](https://www.unece.org/fileadmin/DAM/env/water/publications/WAT_Joint_Bodies/ECE_MP.WAT_50_Joint_bodies_2018_ENG.pdf)
- UNECE (2019a). *Water Convention Programme of Work 2019-2021 – Responding to global water challenges in transboundary basins*. Available from <https://www.unece.org/index.php?id=51910>
- UNECE (2019b). *Revised Guidelines on Environmental Impact Assessment in a Transboundary Context for Central Asian Countries*, UN Doc. ECE/MP.EIA/2019/12. Available from [https://www.unece.org/fileadmin/DAM/env/documents/2019/ece/Meeting\\_of\\_Parties\\_-\\_2019/G-Doc\\_documents/1820233E.docx](https://www.unece.org/fileadmin/DAM/env/documents/2019/ece/Meeting_of_Parties_-_2019/G-Doc_documents/1820233E.docx)
- UNECE and UNESCO (2019). *Step-by-Step Methodology for SDG Indicator 6.5.2* (revised version '2020'). Will be available from <https://www.sdg6monitoring.org/indicators/target-65/indicators652/>
- UNECE, UNESCO and UN-Water (2018). *Progress on Transboundary Water cooperation – Global Baseline for SDG indicator 6.5.2*, UN Doc. ECE/MP.WAT/57. Paris: United Nations Educational Scientific and Cultural Organization. Available from <https://www.unece.org/index.php?id=49605>

- UNESCWA (2018). *Improving Shared Water Resources Cooperation within the Framework of Global and Regional Agreements*. United Nations Economic and Social Commission for Western Asia. <https://www.unescwa.org/events/improving-shared-water-resources-cooperation-within-framework-global-and-regional-agreements>
- United Nations Treaty Collection (2019). Glossary of terms relating to Treaty actions. [https://treaties.un.org/Pages/Overview.aspx?path=overview/glossary/page1\\_en.xml#adoption](https://treaties.un.org/Pages/Overview.aspx?path=overview/glossary/page1_en.xml#adoption)
- UN-Water (2018). *Sustainable Development Goal 6 – Synthesis Report on Water and Sanitation 2018*. New York: United Nations. Available from <https://www.unece.org/index.php?id=49609>
- UN-Water (2019). Monitoring Sustainable Development Goal #6. <https://www.sdg6monitoring.org>
- U.S. Geological Survey (2019). Dictionary of Water Terms. [https://www.usgs.gov/special-topic/water-science-school/science/dictionary-water-terms?qt-science\\_center\\_objects=0#U](https://www.usgs.gov/special-topic/water-science-school/science/dictionary-water-terms?qt-science_center_objects=0#U)
- WorldHealthOrganization(2017). *Guidelinesfordrinking-waterquality,4<sup>th</sup>editionincorporatingthefirstaddendum*. Geneva: WHO. Available from <http://apps.who.int/iris/bitstream/10665/254637/1/9789241549950-eng.pdf?ua=1>
- World Meteorological Organization (2019). *Guidance on Environmental Flows – Integrating E-flow Science with Fluvial Geomorphology to Maintain Ecosystem Services*. Geneva: WMO. Available from [https://library.wmo.int/doc\\_num.php?explnum\\_id=9808](https://library.wmo.int/doc_num.php?explnum_id=9808)



## Guide to reporting under the Water Convention and as a contribution to SDG indicator 6.5.2

Sixty per cent of global freshwater flow in transboundary basins and 40 per cent of the world's human population live alongside these basins. In addition, at least 600 transboundary aquifer systems worldwide support the drinking water supply and food production needs of millions of people. The use of these transboundary waters thus creates interdependent social, economic, environmental and political conditions that require neighbouring riparian States to cooperate so as to ensure for the effective and sustainable management of these shared resources. Reporting by States on transboundary water cooperation helps identify the needs of specific rivers, lakes or aquifers, which will in turn foster a collective understanding of the challenges and opportunities faced in sharing resources, and ultimately strengthen transboundary water cooperation across national, regional and global agendas.

The Water Convention, whose secretariat is hosted by UNECE, provides a key legal and intergovernmental framework for promoting transboundary water cooperation and the sustainable management of shared water resources, which has proved its effectiveness over the past 25 years. Since 2016, the Convention has become available for accession by all United Nations Member States, advocating for the implementation of integrated water resources management as a powerful tool to promote and operationalize the achievement of the 2030 Agenda for Sustainable Development and its Sustainable Development Goals by supporting the implementation of SDG6 and other related goals such as SDG2, SDG3, SDG7, SDG13, SDG15, SDG16 and SDG17.

The introduction of a reporting monitoring mechanism under the Water Convention and the adoption of the SDG framework (SDG indicator 6.5.2) marks an important step in supporting transboundary water cooperation. This Guide to reporting under the Water Convention and as a contribution to SDG indicator 6.5.2 was developed as a result of a review of the first reporting on SDG indicator 6.5.2 and under the Water Convention in 2017–18, which highlighted the need to assist States in completing the template for reporting. This Guide is designed to provide guidance on preparing national reports, by explaining the different sections of the template, clarifying key terminologies and giving specific advice to experts responsible for the reporting process on how to complete the various questions and the reporting template.

Information Service  
United Nations Economic Commission for Europe

Palais des Nations  
CH - 1211 Geneva 10, Switzerland  
Telephone: +41(0)22 917 44 44  
E-mail: [info.ece@un.org](mailto:info.ece@un.org)  
Website: <http://www.unece.org>