

GUIDE TO REPORTING UNDER THE WATER CONVENTION AND AS A CONTRIBUTION TO SDG INDICATOR 6.5.2

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1. Introduction

1.1. Why reporting on transboundary water cooperation?

Reporting under the Sustainable Development Goal (SDG) indicator 6.5.2 and under the Convention for 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; and a guide to reporting could assist States in completing the reporting template, while at the same time improve the overall quality and comparability of national reports (ECE, 2018).

The decision to develop a guide reflects a strong commitment to use reporting as a means by which 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 mobilise resources to support implementation activities, such as through capacity building and technical assistance;
 - provides a means by which to assess any strategies and approaches to transboundary water cooperation at the national level;

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- 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 opportunities faced by a State, and, by systematically reviewing the current state of play, help mobilise the necessary actors into action; and
 - given that the Water Convention is now open to all UN Member States, reporting can offer a means by which States can 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 can:
 - identify emerging implementation issues and difficulties across multiple transboundary waters, and allow States to effectively and collectively respond to any challenges;
 - offer a collective repository of lessons learned and good practices; and
 - help keep the public informed of measures taken to implement the Convention and, through the synthesising and dissemination of results, increase the political attention to transboundary water cooperation both at national and international levels.

While reporting aims to monitor transboundary water cooperation, it is important to recognise at 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 both related to the level of implementation of arrangements and the performance of joint bodies (Section II of the reporting template); as well as the questions related to national measures that have been 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 (see comments below), but ultimately, they may also have different views on 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 in turn should strengthen their usefulness in informing decision-/ policy-making processes related to transboundary water cooperation at national, basin or aquifer, regional and global levels. More specifically, the guide explains how the reporting template might be completed, clarifies key terminology, and provides practical examples of how certain questions might be answered. In addition, the guide offers guidance on how to organise the reporting process and how to utilise the reporting in order to maximise its impact. The guide is therefore designed to be a practical document for government experts that have the responsibility for conducting the reporting process and completing the template.

1.3. Process of developing the guide

In seeking to maximise its usefulness, the guide was developed through an inter-governmental drafting group that brought together around 40 States from Africa, Central Asia, Europe, Middle East, North and South America, and South-east Asia. Two meetings of the drafting group took place in Geneva in May and September 2019. During its first meeting, 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 by the end of September, and approved by the Water Convention's Integrated Water Resources Management (IWRM) Working Group in October 2019, before the final version was published in December 2019. The

process of developing the guide therefore reflects an open inter-governmental process where a wide range of viewpoints from States sharing transboundary waters informed the final output.

1.4. Rationale for layout of the guide

The guide closely follows the structure of the revised reporting template, which was adopted at the 8th session of the Meeting of the Parties to the Water Convention (see Decision VIII/1, ECE 2018). However, prior to dealing with the content of the reporting template, the following two sections consider the process of reporting and how to make the most out of the reporting process in order to advance transboundary water cooperation.

Chapter two then 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 in order to link to the relevant paragraph of the guidance.

Where considered appropriate, guidance is offered on three key aspects: firstly, definitions are provided for certain key terms; secondly, suggestions on how States might approach answering certain questions is provided; and thirdly, examples, drawn from the experiences of States during the first reporting exercise, are given. **It should be stressed at the outset that the guide merely offers guidance to States – ultimately, States must themselves decide how best to reflect their situation.**

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

As part of the SDG framework, the General Assembly adopted SDG 6 which seeks to ensure availability and sustainable management of water and sanitation for all by 2030 (UN, 2017). In order to monitor progress towards SDG 6, a set of eight targets and 11 indicators were developed (UN, 2017). These targets and indicators are monitored through UN-Water's Integrated Monitoring Initiative, which brings together the United Nations organisations that are formally mandated to compile State data on the SDG 6 global indicators (UN-Water, 2019). Key objectives of the Integrated Monitoring Initiative are to develop methodologies and tools to monitor SDG 6 global indicators; to raise awareness at the national and global levels of SDG6 monitoring; to enhance technical and institutional capacity for monitoring; and to compile State data and report on global progress towards SDG 6 (UN-Water, 2019).

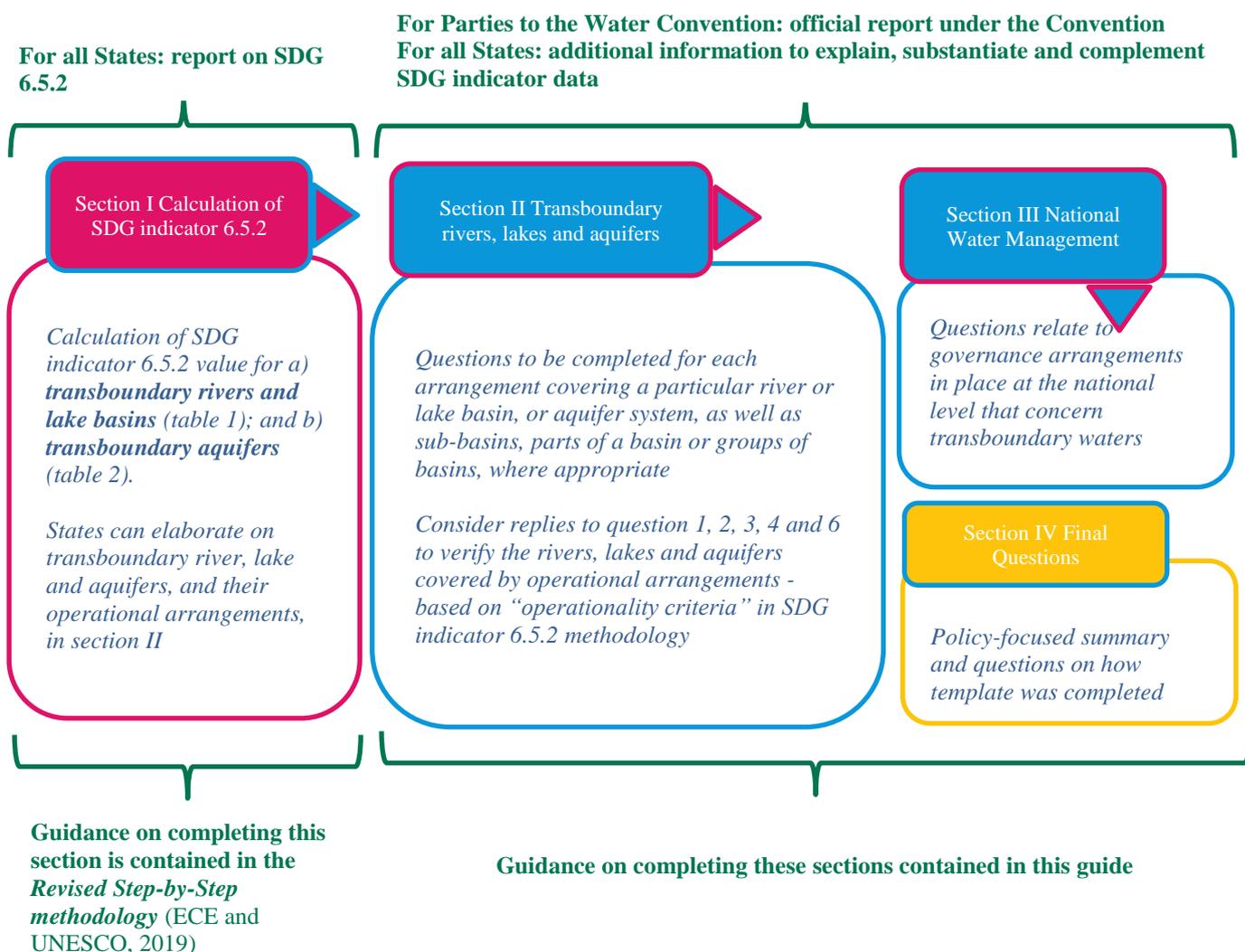
The most salient SDG 6 target in terms of transboundary water cooperation is target 6.5, which has the aim to implement IWRM at all levels, including through transboundary cooperation as appropriate, by 2030. SDG target 6.5 is monitored via two indicators: SDG indicator 6.5.1, which measures the degree of IWRM implementation (0-100); and SDG indicator 6.5.2, which measures the proportion of transboundary basin area with an operational arrangement for water cooperation. UN Environment were designated as custodian agency for SDG indicator 6.5.1, and ECE and UNESCO were designated as co-custodian agencies for the 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 maximise synergies between reporting under SDG indicator 6.5.2 and the Water Convention, ECE and UNESCO co-ordinated both reporting processes. From a practical standpoint this meant that reporting for SDG indicator 6.5.2, and reporting under the Water Convention, were aligned through the use of a single reporting template. The figure below illustrates how that alignment was done, with section I focused on gathering data in order to calculate the SDG indicator 6.5.2 value; section II to III focused on the aspects of reporting relevant to implementing the Water Convention, and also aimed at allowing all States to

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further explain, substantiate and complement the data provided in section I; and section IV summarising key challenges and achievement in transboundary water cooperation, and providing background information on the reporting process, e.g. who was responsible for completing the reporting template.

Structure for reporting template adopted for 2nd reporting exercise



In completing all the sections of the reporting template the Parties to the Water Convention have the benefit that they can use one reporting template to report both on SDG indicator 6.5.2 and on progress in implementing the Water Convention. All States sharing transboundary waters also benefit from completing all sections of the reporting template as many of the questions contained in sections II-IV, and the terminology used, help to substantiate the calculation of SDG indicator 6.5.2 (section I). The template also helps to provide States with a fuller picture of progress on transboundary water cooperation within the State than can be explained from the calculation of the SDG indicator 6.5.2 alone, i.e., Section I. **Therefore, completing the full template allows States to capture a wider range of cooperative efforts than can be captured 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 *SDG indicator reporting: step-by-step methodology (revised version '2020')* (ECE 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's Integrated Monitoring Initiative, reporting on 6.5.2 has also been coordinated with other SDG indicators, and 6.5.1 in particular. SDG 6.5.1 measures the implementation of IWRM at all levels, including transboundary. 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 organisational frameworks that are in place, the degree to which data and information is exchanged, the level of financing for transboundary cooperation, and gender. Reporting on 6.5.1 and 6.5.2, while complementary, offers a fuller picture of IWRM implementation at both national and transboundary levels.

1.6. Organising the reporting process

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

Some general points to consider when organising the reporting process are provided below:

- **Designate a key person or organisation** that has overall responsibility for co-ordinating the reporting exercise. An organisation, such as the Ministry of Water, National Statistical Agency and/or the agency responsible for overseeing the entire SDG process, may vary depending on the State context. National focal points for the Water Convention may be the appropriate key person or organisation for reporting, although 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 reporting template provides an indicative list of the types of institutions that may be consulted during the reporting exercise, which might include 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 agency, civil society organisations, water user associations and the private sector.

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Organising the national reporting exercise in Chad

Chad established a committee for reporting. The first task of the committee was to identify the relevant ministries and other organisations that could assist with the reporting exercise. These ministries and other organisations included the Ministry of Water (Directorate for Water Resources and Directorate for Water Supply); Basin Organisations (Lake Chad Basin Commission, Niger Basin Authority, Nubian Sandstone Aquifer Authority); and the Ministry of the Environment (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 out the reporting template to the aforementioned ministries and other organisations. Members of the Committee took responsibility for following up with each of the ministries and other organisations. The relevant parts of the template were either completed by the ministries or other organisations themselves, or the members of the Committee took responsibility for completing the responses in consultation with the ministries or other organisations. The completed template was then finalised and reviewed by the Committee. If answers were missing or if any clarifications were needed the Committee followed up with the relevant ministry or other organisation. Finally, the Committee reviewed the report before submitting it.

Organising 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 co-ordinator of the reporting exercise. The process of filling the reporting template was then carried out by sending the reporting template (or parts thereof) to the national organisations or agencies with responsibility for the relevant activities set out in the template. Where necessary, the Ministry of Natural Resources and Environmental Protection held informal consultations with these organisations or agencies to complete the reporting exercise.

- **Develop an indicative timeline for completion of the reporting exercise.** Reporting takes place every three years, with the deadline for submitting national reports set as the 30 June. It is important that this deadline is respected because late submissions compromises the ability of the custodian agencies to report to the UN statistical commission on SDG indicator 6.5.2, and the Secretariat 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 might be followed by States to ensure a timely submission of their reports.



- **Where possible, engage with neighbouring States sharing transboundary waters, joint bodies and regional organisations in order to exchange views on the completion of the template or to coordinate answers concerning transboundary issues.** As noted early, in certain circumstances States may have differing opinions over the level implementation within a particular river, lake or aquifer. However, the quality of reporting can be improved by providing the opportunity for States to compare their responses and, if appropriate, formulate a common response. As the case of Hungary below illustrates, bilateral or basin institutions may provide a valuable forum by which to discuss the reporting exercise and identify any potential to co-ordinate national responses. In addition, regional organisations with a mandate related to transboundary water cooperation may be able to support the reporting process (see for example the experience of African Ministers Council on Water (AMCOW) and United Nations Economic and Social Commission for Western Asia (ESCWA), p. 15 below). Where discussions with neighbouring States are

envisaged, opportunities to use the meetings of any joint bodies or commissions should be considered well in advance of the reporting deadline.

How Hungary co-ordinated its national reporting exercise with other Danube riparian States

For section II of the reporting template, Hungary's report was structured into one part relating to the Danube Basin, which encompassed the 1994 Convention on Co-operation 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 used to consult with neighbouring States with the aim of co-ordinating the responses to section II of the reporting 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 response was revised as a result of the discussions with its neighbours. The exercise was therefore helpful in understanding where similarities and differences existed between the States on a particular transboundary water issue.

- **Making a distinction 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 by which to enhance the existing submission. States might focus on addressing any gaps in the previous report(s), or providing more detail responses to open questions. In addition, **where two or more States sharing the same transboundary waters have submitted previous reports, they might use any subsequent reporting exercise as an opportunity to, where appropriate, co-ordinate their responses.**

How to engage with ECE and UNESCO during the reporting process

As noted above, ECE and UNESCO, through UN-Water's Integrated Monitoring Initiative, have a mandate to support reporting under SDG indicator 6.5.2 and Water Convention. ECE and UNESCO, together with other partners, provide technical support, such as the organisation of regional and global workshops, that are designed to assist States throughout the reporting exercise. ECE and UNESCO are also able to support States with specific questions that they may have during the reporting exercise

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

- ECE - transboundary_water_cooperation_reporting@un.org
- UNESCO - transboundary_water_cooperation_reporting@unesco.org

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

- www.sdg6monitoring.org/indicators/target-65/indicators652/
- www.unece.org/water/transboundary_water_cooperation_reporting.html
- <http://ihp-wins.unesco.org/documents/332>.

1.7. How to make the most out of reporting to advance transboundary cooperation

Reporting on transboundary water cooperation, especially for States that share multiple transboundary waters with several neighbouring States, can take a significant effort. It is therefore important that States make the most of the reporting process and the benefits of reporting are maximised.

Opportunities to make the most 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, any difficulties and opportunities to advance cooperation, as well as any responsibilities, gaps and risks related to cooperation.
 - If reporting is done in a consultative manner that engages a broad constituency of stakeholders, it can have the benefit of fostering 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 synthesising the results of the reporting exercise into national factsheets that can be used to help inform national dialogues and decision-making process related to transboundary water cooperation (see for example SDG indicator 6.5.1 States factsheets, at <http://iwrmdataportal.unepdhi.org/iwrmmmonitoring.html>). In addition, an action plan might be developed in order to agree on priority areas that might be progressed prior to the next reporting exercise.
- **At the transboundary level**
 - Where the reporting process is co-ordinated with neighbouring States, the benefits of consultation amongst stakeholders at the national level can also extend to the transboundary level. States can, for example, utilise the reporting process to reach a common understanding of progress in advancing transboundary water cooperation or implementing an agreement for a particular river, lake or aquifer system; or between two States sharing several transboundary waters. As illustrated in the case of Hungary, reporting might be tabled at meetings of any joint bodies for transboundary water cooperation. Meetings of joint bodies might provide an opportunity to, firstly, discuss the results of the reporting exercise; secondly, reach an agreement on key challenges and opportunities for advancing transboundary water cooperation and develop an action plan; and thirdly, 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 via reporting can inform activities under the Water Convention, including the Convention's three yearly programmes of work (see ECE, 2019a), and the activities of its working groups and other bodies, such as the Implementation Committee. To support the uptake of the results from the reporting exercise, the Water Convention Secretariat prepares a synthesis report based on the national reports (ECE, 2018a).
 - At the global level, and within the SDG framework, the data and information gathered from national reports can inform the High-level Political Forum on Sustainable Development, the UN's annual report on progress towards the SDGs (UN, 2018a), and UN Water's 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 (ECE, UNESCO & UN-Water, 2018).

- Results from the reporting exercise can be used by regional organisations in order to inform their own reporting exercises or in order to facilitate dialogue on transboundary water cooperation at the regional level. For instance, AMCOW has introduced a harmonised process for monitoring and reporting on water and sanitation targets across several international agreements and regional commitments (AMCOW, 2019). Another example is how ESCWA has used the SDG indicator 6.5.2 reporting exercise to assess how to advance transboundary water cooperation within the Arab region (ESCWA, 2018).

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

This chapter follows the template for reporting 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 to the relevant paragraph of the guidance.

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 whilst at the same time offering a “meaningful story”.**
- **Where appropriate provide links to further background information, such as the webpages of projects and programmes, river basin organisations, maps of transboundary waters, and the text of the agreements and other arrangements.**
- **Consider sharing drafts of the reporting template with ECE and UNESCO for feedback prior to formal submission.**
- **Plan carefully and in advance so as 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 (basins and arrangements), 3 (joint bodies), 4 (objectives, strategies and plans), and 6 (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 identify areas that might need support. There is therefore no benefit from either under- or over-estimating current progress in implementing cooperative arrangements.**

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]

- [1] For guidance on completing section I, see *revised step-by-step methodology* (ECE and UNESCO, 2019).
- [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 ECE, 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’; and that, ‘other arrangements in no way are to be regarded as non-committal instruments’ (ECE, 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 to be 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, which might include, convention, treaty, protocol, memorandum of understanding, joint declaration, exchange of letters or minutes (see ECE, UNESCO & UN-Water, p. 44 for further examples).

Agreement 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’ (ECE, 2013, para. 240). For example, in 1998 Ecuador and Peru adopted the *Agreement on Border Integration, Development and Neighbourhood*, which, while broad in nature, seeks to harmonise policies for the sustainable use of ecosystems in the common border and ensure 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, *2009 Convention for the Prevention of Natural Disasters in Central America* (<http://www.ceprendenac.org/>), would therefore not be considered an agreement for transboundary 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 upon 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 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 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 arrangement 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 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*

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Protection and Recharge of the Franco-Swiss Genevois Aquifer was concluded between the Republic and Canton of Geneva in Switzerland, and the Communities of Annemasse, the Genevois Communes and the commune of Viry in France.

[3] When listing bilateral and multilateral agreements or arrangements, include the official title of the agreement or arrangement; and the date when the agreement or arrangement was adopted, and where different the date of entry into force. See for example:

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.

Agreement on the Establishment of the Zambezi Watercourse Commission, 13 July 2004 (entered into force 19 June 2011).

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 authorises 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: 1) salinity; 2) sanitation; and 3) water shortages. The compliance mechanisms include the regular exchange of information (Criterion 4) between the States; monitoring construction, quantity and quality of surface water; prior consultation; and 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, represent an extraordinary framework for collaboration that helps citizens in both countries.

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 similar¹. 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 agreements² 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]

¹ 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.

² 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' (ECE, 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 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 *1994 Convention between the Government of Panama and the Government of Costa Rica concerning Cooperation on the Development of the Border Area*.
- [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 the basin, sub-basin, part of a basin or group of basins that a particular agreement or arrangement applies

to. The table below 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.**

Revised draft version following 2nd drafting group meeting comments

	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
Basin arrangement(s) in place for all transboundary waters <i>but no</i> arrangements in place for any sub-basins or parts of basins	<p>Complete all questions in Section II once for the basin that is shared.</p> <p>Section II may be completed for sub-basins but not required</p>		<p>Complete all questions in Section II for each basin</p> <p><i>Note! 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 Finland example below)</i></p>	
Basin arrangement(s) in place for all transboundary waters <i>and</i> additional arrangement(s) in place for sub-basin(s) or part(s) of basin	<p>Complete Section II for any basin arrangement(s)</p> <p>Complete Section II again for sub-basin(s) or part of a basin(s) where arrangement(s) in place</p> <p><i>Note! 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 Finland example below)</i></p>			
Basin arrangement(s) only in place for one or some basins and no arrangement in place for any sub-basins or parts of basins	Not applicable		<p>Complete Section II for each basin arrangement</p> <p>For basins with no basin arrangement complete beginning of section II (including question 1), question 2 (only if a joint body exists), and questions 4-13 (only where appropriate, e.g. cooperative activities taking place in absence of an arrangement)</p>	
No arrangements are in place for the basin(s) but arrangements in place for sub-basin(s) or parts of a basin	<p>Complete beginning of section II (including question 1), question 2 (only if a joint body exists), and questions 4-13 (only where appropriate, e.g. cooperative activities taking place in absence of an arrangement) for each basin</p> <p>Complete II again for arrangement(s) covering a sub-basin or part of a basin</p> <p><i>Note! 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</i></p>			
No arrangements are in place for the basin(s), sub-basin(s) or parts of a basin	<p>Complete beginning of section II (including question 1), question 2 (only if a joint body exists), and questions 4-13 (only where appropriate, e.g. cooperative activities taking place in absence of an arrangement)</p>			

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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 these 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 on the Frontier Water Commission in 1980.

Finland and the Russian Federation share a land border of approximately 1300 km. Several hundreds of rivers cross the border between Finland and Russia. Many of them are small and close to natural state. Nineteen of the larger of these 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 was signed by Finland and the Soviet Union in 1964 and entered into force a year later. The Agreement covers all rivers crossing the border. It was adopted by the Russian Federation after the dissolution of the Soviet Union in 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 individual: in some rivers hydropower and municipal waste water are key issues, while in others it is agricultural runoff. These facts made it necessary to make a separate report (questions 4-13), as grouping rivers would fail to fully capture the individual characteristics that are evident in each river.

- [8] Where appropriate, and to allow for cross-State comparison, States are encouraged to consult the UNEP-GEF *Transboundary Water Assessment Programme* 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>.
- [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 make such an aquifer 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 & 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 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**'.
- [11] A '**confined aquifer**' is a fully saturated aquifer with water pressure everywhere (including at its upper boundary) greater than atmospheric pressure, 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 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 a) where data is available but, based on existing knowledge, it is not possible to classify the nature of the aquifer; or b) 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.

Brazil's experience when 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); the Chuy Aquifer System (Brazil and Uruguay); Costeiro Aquifer System (Brazil and French Guyana); Grupo Roraima Aquifer System (Brazil, Guyana and Venezuela); Guarani Aquifer System (Brazil, Argentina, Uruguay and Paraguay); Pantanal Aquifer System (Brazil, Bolivia and Paraguay); Permo Carbonífero Aquifer System (Brazil and Uruguay); Serra Geral Aquifer System (Brazil, Argentina, Uruguay and Paraguay).

The Guarani 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 GEF, containing consensus information among the four States that share the aquifer. These studies show that the Guarani aquifer system, although smaller than the total area of the Rio de la Plata river basin, falls slightly outside the river basin. Additionally, in the area of the Guarani 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.

[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.**

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]

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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 SDG indicator 6.5.2, including the criteria for operationality (section I, *revised step-by-step methodology*, ECE 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 because, while prior to its entry into force, the Parties may only be obliged to not act at variance with the agreement or arrangement, upon entry into force they are legally bound to take the necessary steps to implement it. 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 therefore 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* (ECE 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 *Nile Cooperative Framework Agreement*, 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. 42).

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 it. 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 established 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 by the additional process of ratification, accession, acceptance or approval (UN Treaty Collection, *Glossary of terms relating to Treaty Actions*, https://treaties.un.org/Pages/Overview.aspx?path=overview/glossary/page1_en.xml). For example, the *Agreement 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 Agreement only entered into force after Ukraine ratified it in July 28, 2017 (Moldova ratified it in January 22, 2013).

- [17] **An agreement or arrangement developed but not in force** might relate to the situation where an agreement has been signed by some or all States concerned but it has not been ratified by the requisite number of States.
- [18] **An agreement or arrangement developed, but not in force for all riparians** might be an agreement that requires three out of four riparian States to ratify it before it enters into force. If only three States have so far 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 and has not been **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*, ECE 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 absence of an agreement or arrangement. For example, El Salvador noted in their first national report that a binational commission has been established with Guatemala to discuss transboundary water issues, but so far, the two States have not been able to conclude any agreement concerning their shared river basins and aquifer systems. Along similar lines, Mexico identified 13 transboundary river basins with the US which, while falling within the scope of the US-Mexico International Boundary and Water Commission, are not subject to a specific treaty. The only river basins covered by a bilateral agreement between the US and Mexico are the Colorado, Grande and Tijuana River Basins (see *Treaty and Protocol on Utilisation of Waters of the Colorado and Tijuana Rivers and of the Rio Grande between the United States and Mexico*, 3 February 1944).

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 arrangement, 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 the co-operation for the protection and the 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 to 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 & Magsig, 2012, pp. 66-69; Tanzi & 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 State reporting 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 one after 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 **Error! Reference s ource not found.** above.

(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 or lake basin or sub-basin may explicitly state that it covers both surface water and groundwater. For instance, as noted above (see note [23], the *2000 Agreement on the Establishment of the Zambezi Watercourse Commission* applies to the ‘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 both connected and unconnected to the surface water of rivers and lakes (ECE, 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 note [23] above, **interpreting whether an agreement covers aquifers or not will ultimately rest on the reporting State.**

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

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

- All water uses
- A single water use or sector
- Several water uses or sectors

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

Water uses or sectors

- Industry
- Agriculture
- Transport (e.g., navigation)
- Households
- Energy: hydropower and other energy types
- Fisheries
- Tourism
- Nature protection
- Other (*please list*): [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 purpose 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.

(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]

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

[34] **Monitoring** can be understood as, ‘a process of repetitive measurements, for 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’ (ECE, 2005, p. 6). For monitoring to be considered to be ‘**joint monitoring**’ a certain level of co-ordination 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’ (ECE, 2013, para. 279). While data and information may therefore be gathered by individual States via 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 account for gender considerations or account for the rights of indigenous people.

(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 agreement or arrangement with national laws, policies and programmes
- Aligning implementation of agreement or arrangement with regional laws, policies and programmes
- Lack of financial resources
- Insufficient human capacity
- Insufficient technical capacity
- Tense diplomatic relations
- Non-participation of certain riparian countries in the agreement
- No significant difficulties
- Other (please describe): [fill in] [36]

(f) What are the main achievements in implementing the agreement or arrangement and what were the keys to achieving such success? [fill in] [37]

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- (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]

[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* (ECE 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.

3. Is your country a member of any joint body or mechanism for this agreement \neq 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 SDG indicator 6.5.2, including the criteria for operability (section I, *revised step-by-step methodology* (ECE 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* (ECE, 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, authorised for that purpose by governments; iii) usually comprised of a decision-making body, an executive body, and 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, basin or bilateral commission, expert group, meeting of national focal points, 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’ (ECE, 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 formalised 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 ECE, 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 of it. 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.

- | | | |
|-----|---|--------------------------|
| (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 | <input type="checkbox"/> |
| | They have observer status [47] | <input type="checkbox"/> |
| | Other (<i>please describe</i>): [fill in] | |
| (f) | Does the joint body or mechanism have any of the following features (<i>please tick the ones applicable</i>)? | |
| | A secretariat [48] | <input type="checkbox"/> |

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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 observer. For example, while not being members of the International Commission for the Protection of the Rhine, Austria, Italy, Liechtenstein and the Wallonia Region of Belgium are given observer status within the Rhine Commission because they share parts of the Rhine river basin. Basin-wide activities are implemented through a Co-ordination 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 & 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 ECE, UNESCO & UN-Water, 2018, p. 46).

Examples of subsidiary bodies under the Zambezi Water Commission (ZAMCOM)

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 in the Southern African Development Community (SADC) region, and covers eight countries namely 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. The main objective of the commission is to promote the equitable and reasonable utilization of the water resources of the Zambezi Watercourse as well to ensure efficient management and sustainable development thereof.

The ZAMCOM agreement established **3 main bodies**:

Council of Ministers - comprised of Ministers responsible for water resources management and development from all member states. The council meet once annually in ordinary session to adopt and provide policy guidance or approve recommendations from the ZAMCOM Technical committee (ZAMTEC). The council may meet in extraordinary session at the request of any member state.

The ZAMCOM Technical Committee (ZAMTEC) - consist of not more than three delegates from each member state. The committee meets once in ordinary session and may meet in 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 which provides technical and administrative roles to the council under the supervision of the ZAMTEC

ZAMCOM has several subsidiary bodies, including:

Zambezi subcommittee on Hydrology (ZAMSCOH): is a technical subsidiary body which advises ZAMTEC on hydrological issues.

Technical working groups: are task specific and **are** formed specifically to execute a project or task. The technical working groups are composed of technical subject experts from the Riparian States that work on specific project. For example, the **Joint Project Steering Committee (JPSC)** is formed whenever there is a project to give strategic directions and technical advice.

National Stakeholder's coordination committee (NASC): are platforms that ensure that there is effective engagement and communication with key stakeholders in the Riparian States. It is comprised of major relevant stakeholders' institutions and bodies such as government and non-governmental organisation, civil society, traditional leadership, academia, etc. Key functions of NASC are: i) to serve as a platform for national consultations that facilitate input into basin wide processes, outputs, outcomes and decisions; ii) to serve as a vehicle for dissemination of ZAMCOM plans, products and processes, as well as obtaining feedback; iii) to serve as a multi sectorial platform for coordination and fostering national ownership of ZAMCOM plan and processes.

Basin Wide Stakeholder coordination (BASC): A body for coordinating and harmonising 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 organise annually the Zambezi Basin Stakeholder Forum; and, iii) to serve as the nucleus of a basin consultative platform.

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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 co-operation in joint management, use and protection of interstate sources of water resources, 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:

Amudarya Basin Water Organisation and the Syrdarya Basin Water Organisation – the two water organisations 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.

Secretariat – the ICWC secretariat supports the implementation of ICWC commitments. This includes, in collaboration with other ICWC bodies, the preparation of measures and draft decisions for ICWC meetings, the financial management of funds provided for ICWC activities, and the co-ordination of international communications.

Scientific-information centre (ICWC-SIC) – ICWC SIC is responsible for 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.

Co-ordination metrological centre – the metrological centre is responsible for the coordination of engineering policy and 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 may be included.

(g) What are the tasks and activities of this joint body or mechanism?³ [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]	

³ 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 ECE, *Guide to Implementing the Water Convention and Principles for Effective Joint Bodies for Transboundary Water Cooperation* (ECE, 2013, paras 261-263; ECE, 2018b). Both tasks and activities which joint bodies coordinate and tasks which they implement 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 might be provided at the end of the question, i.e., under ‘[fill in]’.

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

(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]

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Please describe, if any: [fill in]

Unexpected planning delays

Please describe, if any: [fill in]

Lack of resources

Please describe, if true: [fill in]

Lack of mechanism for implementing measures

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 per year

Once per year

Less than once per 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 of legitimacy, i.e., is there equitable representation of stakeholders in decision-making fora? (see also question 13 below); accountability, i.e., how are decision-makers held to account for their actions?; and, transparency, e.g. how our 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's use and management, should not be considered here.

[55] This question should be considered alongside the calculation of SDG indicator 6.5.2, including the criteria for operationality (section I, *revised step-by-step methodology*, ECE 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 ECE, 2013, p.17-18). This provision of the Water Convention recognises that coastal States (ie., any State whose territory borders marine waters) **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 the Danube-Black Sea example below for further details). **This question should not be ticked if the coastal State also has territory within the basin or sub-basin itself**

Hungary’s cooperation with Black Sea States via the International Commission for the Protection of the Danube River Basin (ICPDR)

Hungary as a landlocked State 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 minimise and prevent pollution from the Danube River Basin to the Black Sea, especially by nutrients. ICPDR also acted as a forum whereby Riparian States of the Danube and Black Sea States could collectively take steps to protect the Black Sea. Such steps include, the riparian States adopting more stringent measures related to nutrient removal from waste water. This activity is in line with the EU Marine Framework Directive, which also requires landlocked States to coordinate their activities to prevent sea pollution.

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 SDG indicator 6.5.2, including the criteria for operationality (section I, *revised step-by-step methodology* ECE and UNESCO, 2019).

[59] For States that have an agreement or arrangement, as well as 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 harmonised *policies, programmes and strategies* covering the relevant catchment areas, or parts thereof, which should aim to prevent, control and reduce transboundary impact and protect the ecosystems of those transboundary waters’ (Art. 2(6)). In addition, the Convention requires its Parties to set water quality *objectives* and *criteria* for the purposes of preventing, controlling and reducing transboundary impact (Art. 3(3)). Other instruments, such as a joint vision, declaration or principles, might 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 the scope of any objectives, plan or strategy; whether they are joint or co-ordinated; when and how the instrument was adopted, e.g., decision of a joint body; the timeframe; any review mechanisms; how it is implemented; and how progress is assessed. Where multiple objectives, strategies or plans have been adopted, the key overarching ones might be referred to, such as a joint or coordinated basin-wide management plan (see examples below).

Master Plan for the Development and Management of the Senegal River

Within the framework of the Organisation for the Senegal River (OMVS), the riparian States have developed a Master Plan for the development and management of the river. The Master Plan is a result of an extensive consultation process with stakeholders, which was carried out between 2009 and 2011. The plan sets out a concrete action to achieve sustainable development within the basin by 2025, whilst 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 of the plan 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 tool by which to reduce the risk of conflict related to the availability or accessibility of water resources within the basin, and it therefore contributes to peace and stability in the sub-region.

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

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) the establishment of sustainable water management; and ii) the undertaking 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, 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 co-ordinated plans on the management of the water resources of the Sava River Basin – a sub-basin of the Danube River Basin. The implementation body of the FASRB is International Sava River Basin Commission (ISRBC).

Pursuant to these obligations, the ISRBC has 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 that was the culmination of a comprehensive analysis of the Sava River Basin, including the characterisation of 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 has been developed which addressed the Sava river and its tributaries larger than 1000 km² and rivers of basin wide importance and transboundary and national groundwater bodies which are important to the size (>1000 km²) or due to various other criteria.

The 1st Sava RBMP was adopted by the Parties in December 2014 and since then the process towards the development of 2nd Sava RBMP takes place resulting in finalization of 2nd Sava River Basin Analysis and Interim Overview for the Significant Management Issues with the report of the implementation of measures defined in the 1st Plan. With the 2nd Sava RBMP the Parties follow the provisions of the WFD regarding the 6 years cycle of the revision of the plans (available at: <http://www.savacommission.org/srbmp/>).

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

- | | |
|---|--------------------------|
| Regulation of urbanization, deforestation, and sand and gravel extraction. | <input type="checkbox"/> |
| Environmental flow norms, including consideration of levels and seasonality [62] | <input type="checkbox"/> |
| Water quality protection, e.g. nitrates, pesticides, faecal coliforms, heavy metals | <input type="checkbox"/> |
| Water-related species and habitats protection | <input type="checkbox"/> |
| Other measures (<i>please describe</i>): [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)). The question also seeks to identify basin or sub-basin *specific* arrangements that are in place for the protection of ecosystems, such as programmes that have been 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 reflected in the Water Convention, which calls upon its 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 ECE, 2013, pp. 26-27). Along similar lines, the Watercourses Convention, obliges watercourse States to, ‘individually and, where appropriate, jointly, protect and preserve the ecosystems of international watercourses’ (Art. 20); and 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 reasonable variability within the water regime, as well as extreme periods, e.g. floods and droughts (see also WMO, 2019)

Environmental Flows in the context of the Republic 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 different SADC States. At the national level, the Republic of South Africa’s National Water Act (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 becomes a challenge that requires bilateral and multilateral action. The Republic of South Africa has established transboundary cooperation with its neighbours related to water issues through the adoption of basin arrangements and commissions. One

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of the most important arrangements is the 2002 Interim Inco-Maputo Agreement, which is a water sharing agreement between the Republic of South Africa, the Kingdom of Eswatini (Swaziland) and Mozambique. In this agreement, the three riparian States have introduced provisions related to Environmental Impact Assessment, and also requirements related to environmental flows crossing sovereign borders. Since the Republic of South Africa is upstream in most cases, it has committed to release set targets with the aim of maintaining the rivers' ecosystems, including their estuary.

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
- Climatological information
- Future planned measures with transboundary impacts, such as infrastructure development
- Other subjects (*please list*): [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 /No
- (f) Is the database publicly available?
- Yes /No

If yes, please provide the web address: [fill in]

(g) What are the main difficulties and challenges to data exchange, if applicable?

Frequency of exchanges

Timing of exchanges

Comparability of data and information

Limited spatial coverage

Inadequate resources (technical and/or financial)

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

[63] This question should be considered alongside the calculation of the SDG indicator 6.5.2, and the criteria for operationality (see section I, *revised step-by-step methodology*).

[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 Draft Articles on 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 issues by the competent authority or appropriate body’ (Art. 13(1); see also ECE, 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’; and the ILC Draft Articles on Transboundary Aquifers provides that, aquifer States shall, ‘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 the topics of cooperation included in an agreement (Section II, question 2(d)); the task and activities of a joint body (Section II, question 3(g)); and the main challenges in advancing transboundary water cooperation (section IV, question 1). A key distinction between these questions is that while, questions 2(d) and 3(g) of Section II ask whether data and information exchange is provided for in an agreement or arrangement, or the tasks and activities of a joint body or mechanism, this question 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 SDG indicator 6.5.2, and the criteria for operationality (see section I, *revised step-by-step methodology*).
- [69] Data and information might be exchanged through uploads to a common web-based information system and might be instantaneous, or take place through the meetings of joint bodies or mechanisms (see examples of data and information by Ghana and Ivory Coast below).

Ivory Coast's experience in data and information exchange on transboundary waters

Ivory Coast shares eight transboundary rivers: Niger, Volta, Comoé, Bia, Tanoé, Sassandra, Cavalla and Nuon. River Basin Organisations (RBOs) are in place for the following:

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

An RBO is also being developed for the Comoé, Bia and Tanoé River Basins – the Comoé-Bia-Tanoé Basin Authority. A programme of activities has been approved by the Council of Ministers and the 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 in order to address a particular issue.

Where RBOs are in place, data and information are mainly exchanged via the RBO. IT platforms for data collection are available at the level of each State member of the RBO. Data on climate, hydrology, socio-economics, etc., are provided by each State as an input to the RBO database. RBOs disseminate hydrological, environmental, meteorological and socio-economic information among Member States. For instances, 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 concerning the level of surface waters (floods and droughts) originated from this processed date is transmitted to the 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). ECOWAS's Water Resources Co-ordination Centre collects annual data on water resources, drinking water, hygiene and sanitation and makes this available to Member States and the general public through its 'WASSMO' database.

Experience of data and information exchange between Ghana and Volta Basin States

The Volta River Basin is shared between Ghana, Benin, Burkina Faso, Ivory Coast, 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 minimise 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), set up in 2005, agreed after the 2007 floods to exchange information. Accordingly, Société Nationale d'électricité du Burkina Faso (SONABEL) transmits daily information on water levels of the Bagre and Komienga dams in the rainy season every year. This goes to key water, disaster management, and local government 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 White Volta Flood Early Warning System.

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

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?

	<i>Hydrological</i>	<i>Ecological</i>	<i>Chemical</i>
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 connected to a transboundary river or lake [74]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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(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 a) the objectives or needs to be achieved in terms of policy relevant information to be obtained; b) the identification of monitoring sites; c) the selection of determinants for surface water, groundwater, suspended solids and sediments; d) sampling frequency; and sampling and analytical methods (ECE, 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 with 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 pre-requisite for carrying out such assessments** and in the identification of the magnitude of any water-related problems (UNECE, 2006, p. 1). For a definition of ‘joint monitoring’ see note [38] above. 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)

Monitoring of the Northern Sahara Aquifer System

The Northern 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 m³. The aquifer system covers an area of over 1 million km², of which 700,000km² is situated in Algeria (68%); 250,000 km² in Libya (24%); and 80,000 km² is 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) – www.oss-online.org. The mechanism is considered as 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 OSS, the chairing of which rotates between the countries. Through the SASS mechanism the three countries have been able to implement projects that have helped 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.

An important feature of this work related to 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 deeper knowledge and understanding of the aquifer system, and the pressures that have been placed upon it due to intense exploitation. The most observed of which has been the pressure drop in the artesian boreholes and the significant drop in water levels for the drilling operated by pumping.

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 ask if water quality, and the elaboration of water quality objectives, is a topic of cooperation within an agreement

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or arrangement and/or a task of a joint body or mechanism. There should therefore be a consistency in the responses to these questions. 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 Organisation 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 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.

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 minimised’ (Art. 3(1)(1); see UNECE, 2013, p. 57). Along similar lines, the Watercourses Convention, requires Watercourse States to notify potentially affected States and competent international organisations 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).

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

International Warning and Alarm Plan of the Rhine Commission

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 stop water intake. In order to address such accidents, the Rhine Commission established an International Warning and Alarm Plan for the Rhine (IWAP) in 1986. IWAP consists of several international main warning centres in France, Germany, the Netherlands and Switzerland, which have clear determined areas of responsibility for monitoring and alerting key agencies of any emergency situations, and are operational 24 hours a day. In addition, an alarm model for the Rhine and tributaries has been developed in order to detect and predict pollutant waves, and the alarm system is regularly tested.

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

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

Notification and communication	<input type="checkbox"/>
Coordinated or joint alarm system for floods [82]	<input type="checkbox"/>
Coordinated or joint alarm system for droughts [83]	<input type="checkbox"/>
Joint climate change adaptation strategy [84]	<input type="checkbox"/>
Joint disaster risk reduction strategy [85]	<input type="checkbox"/>
Other (<i>please list</i>): [fill in] [86]	
No measures	<input type="checkbox"/>
<i>If not, why not? What difficulties does your country face in putting in place such measures?:</i> [fill in]	

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

[82] A co-ordinated 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 States began gathering flood-related data. See generally the Drought Risk in the Danube Region (DRIDANUBE) project, which has the aim to increase the capacity of the Danube region to manage drought related risks by helping all stakeholders involved in drought management become more efficient during drought emergency response and prepare better for the next drought, see <http://www.interreg-danube.eu/approved-projects/dridanube>.

[83] See for example the Flood Forecasting and Warning System in the Sava River Basin, 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* (ECE, 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 UNECE and UN Office for Disaster Risk Reduction, *Words into Action Guidelines* (UN, 2018b).

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

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.

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Practical application of Minute 323 under the 1944 Treaty between Mexico and the United States of America

The 1944 Treaty is the legal instrument that regulates the relationship between Mexico and the United States of America concerning the waters of transboundary rivers (Colorado, Grande and Tijuana). A third of the flow in the main channel of the Rio Grande is allocated to the United States of America, provided that this third is not less, as an average amount in cycles of five consecutive years, than 431,721 Mm³ annually. Mexico receives from the Rio Colorado 1,850,234 Mm³ annually.

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

On May 31, 2019, the US Commissioner of the International Boundary 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 made by delegations from both countries and signed by both sections of the IBWC on July 9, 2019. The Bureau of Reclamation forecasts that by January 1, 2020, the water level of Lake Mead will be 1080.40 feet above mean sea level (ft msl), so according to Minute 323, ‘Volunteer Savings’ criteria will be applied, which decrease allocations to Mexico from the Colorado River by 51 Mm³ in 2020. This volume shall be recovered by Mexico when conditions get better, i.e., a joint study projects an elevation of 1000 ft msl in the level of Lake Mead waters for the next year.

Among other actions to preserve and increase the water availability of the Colorado River, it is contemplated to invest at least 31.5 million Mexican dollars (MDD) for the construction of hydro-agricultural infrastructure with the aim to increase water use efficiency. In exchange, Mexico must deliver 283 Mm³ water savings by December 31, 2026. Out of this 283 Mm³, 135 Mm³ will be for United States of America use, 86 Mm³ will be for environmental uses in the Colorado River Delta, and finally 62 Mm³ will benefit all system users.

Further information can be found at: <http://www.cila.gob.mx.actas/323.pdf>.

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]

[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 ECE, 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 ECE, 2013, para. 323).

[89] ‘**Mutual assistance**’ can be defined as water management related activities that are conducted by one State by the request of another State, either for free 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, etc).

[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.

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

Stakeholders have an advisory role in the joint body

Stakeholders have a decision-making role in the joint body

If yes, please specify the stakeholders for the joint body or mechanism: [fill in]

Intergovernmental organizations

Private sectors organizations or associations

Water user groups or associations

Academic or research institutions

Other non-governmental organizations

General public

Other (please specify): [fill in]

Availability of information to the public [94]

Consultation on planned measures or river basin management plans⁴ [95]

Public involvement

Other (please specify): [fill in] [96]

⁴ 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, organisations 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 *Implementation Guide* for the Aarhus Convention 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’ (ECE, 2014b, 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 ECE, 2013, pp. 93-97).
- [95] See also the example of the Mekong River below. Responses may also relate to aquifer management plans.
- [96] For example, how are gender considerations taken into account when considering participation of the public and relevant stakeholders in decision-making.

Procedures for Prior Notification, Prior Consultation and Agreement and stakeholder participation in the Mekong River Basin

Procedures for Prior Notification, Prior Consultation and Agreement (PNPCA) were developed by the Parties to the 1995 Mekong Agreement (Cambodia, Lao PDR, Thailand and Vietnam). ‘Prior notification’ requires a State proposing a project to notify the details of the project to the Parties before it commences the proposed use; ‘prior consultation’ involves a six-month process of technical evaluation and formal consultations where notified Member States have an opportunity to assess any potential transboundary impact on ecosystems and livelihoods, and to recommend measures to address those issues before water is used; and ‘specific agreement’ requires a thorough negotiation to achieve a consensus on terms and conditions of the 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 in the wet season, public consultations are held in order to hear any 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 see: <http://www.mrcmekong.org/topics/pnpca-prior-consultation/>.

Stakeholder involvement in the Senegal River Basin

To strengthen stakeholder involvement in the Senegal River Basin, National Coordination Committees (NCCs) and Local Coordination Committees (LCCs) have been established. The NCC and LCCs fall under the institutional framework of the Organisation for 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, optimise and monitor environmental impacts on the Senegal River. It was adopted at the 45th Ordinary session of OMVS Council of Ministers held on 20 and 21 April 1998 in Nouakchott.

LCCs are legally constituted structures in each riparian State. The main responsibilities of LCCs 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, sensitise 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 decisions and recommendations taken by relevant bodies (steering committee, NCC, etc); and v) be the interface between the populations, the national authorities and OMVS. In each State, LCCs are supervised by a NCC who has 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, at the national level, the participation and exchange of ideas between various ministerial departments concerned; and v) be the interface between national actors and the regional level.

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.

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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 ECE, 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, etc.

[99] The brief description should highlight the 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 Kyrgyz Republic on Interstate Use of Water Objects, Water Resources and Water Management Constructions, 2001; and Part 6, Namibia Water Resources 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 and 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* (ECE, 2013, para. 67).
- [103] The description should focus on how the principles are incorporated into national laws, policies, actions plans and strategies related to transboundary water management.

(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* (ECE, 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 below), as well as the process by which licenses or permits are enforced, or where necessary, revoked. However, **the monitoring and control of authorised 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,

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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 forces, as well as in light of changes in scientific knowledge and understanding'. See also *Guide to Implementing the Water Convention* (ECE, 2013, pp. 41-45).

(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 authorised 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 (ECE, 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 (ECE, 1996, p. 35).

(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

Norm 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

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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 imbedded 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 take ‘additional specific measures’, to prevent the pollution of groundwaters (Art. 3(1)(k)). See also ECE, *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 water objectives and the adoption of groundwater quality criteria’ (Provision 5 and commentary, ECE, 2014a, pp 9-12). See also the EU Groundwater Directive (2006/118/EC), which requires Member States to set groundwater quality standards, and measures to prevent or limit inputs of pollutants into groundwater; and 2008 ILC Draft Articles on Transboundary Aquifers (with commentaries), Art. 12, ILC, 2008.

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 when preventing, controlling and reducing transboundary impact (Art 3(1)(h)); and lists the participation in the implementation of EIAs relating to transboundary waters as a task of any joint body or mechanism (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 in the process of any potentially affected Parties before a final decision on the project is made (see ECE, 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’ (ICJ, 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 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 ECE, 2013, paras 199-200).
- [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* (ECE, 2019b).

Second draft version for comment only

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]

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

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

Joint body or mechanism	<input type="checkbox"/>
Other riparian or aquifer countries	<input type="checkbox"/>
National water management authority	<input type="checkbox"/>
Environment agency/ authority	<input type="checkbox"/>
Basin authority (national)	<input type="checkbox"/>
Local or provincial government	<input type="checkbox"/>
Geological survey (national)	<input type="checkbox"/>
Non-water specific ministries, e.g. foreign affairs, finance, forestry and energy	<input type="checkbox"/>
Civil society organizations	<input type="checkbox"/>
Water user associations	<input type="checkbox"/>
Private sector	<input type="checkbox"/>
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 (<i>insert comments</i>): [fill in] [123]
5.	Name and contact details of the person(s) who filled out the questionnaire (<i>please insert</i>): [fill in]
	Date: [fill in] Signature: [fill in]

[123] Respondents may describe the process by which the template was completed here, such as the organisation 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.

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