

## Reporting on global SDG indicator 6.5.2

### TEMPLATE of the second cycle for reporting

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#### Content of the template

The template is divided into four parts:

- Section I - Calculation of SDG indicator 6.5.2
- Section II - Information on each transboundary basin or group of basins
- Section III - General information on transboundary water management at the national level
- Section IV - Final questions

Country name: [**MOZAMBIQUE**]

## I. Calculation of Sustainable Development Goal indicator 6.5.2

### *Methodology*

1. Using the information gathered in section II, the information gathered in this section allows for the calculation of Sustainable Development Goal global indicator 6.5.2, which is defined as the proportion of transboundary basin area with an operational arrangement for water cooperation.
2. The step-by-step monitoring methodology for indicator 6.5.2, developed by UNECE and UNESCO in the framework of UN-Water, should be referred to for details on the necessary data, the definitions and the calculation.<sup>a</sup>
3. The value of the indicator at the national level is derived by adding up the surface area in a country of those transboundary basins (river and lake basins and aquifers) that are covered by an operational arrangement and dividing the area obtained by the aggregate total area in a country of all transboundary basins (both river and lake basins, and aquifers).
4. Transboundary basins are basins of transboundary waters, that is, of any surface waters (notably rivers, lakes) or groundwaters which mark, cross or are located on boundaries between by two or more States. For the purpose of the calculation of this indicator, for a transboundary river or lake, the basin area is determined by the extent of its catchment. For groundwater, the area to be considered is the extent of the aquifer.
5. An “arrangement for water cooperation” is a bilateral or multilateral treaty, convention, agreement or other formal arrangement among riparian countries that provides a framework for cooperation on transboundary water management.
6. For an arrangement to be considered “operational” all the following criteria need to be in place in practice:
  - (a) There is a joint body, joint mechanism or commission (e.g., a river basin organization) for transboundary cooperation (criterion 1);
  - (b) There are regular (at least once per year) formal communications between riparian countries in form of meetings (either at the political or technical level) (criterion 2);
  - (c) Joint objectives, a common strategy, a joint or coordinated management plan, or an action plan have been agreed upon by the riparian countries (criterion 3);
  - (d) There is a regular (at least once per year) exchange of data and information (criterion 4).

### *Calculation of indicator 6.5.2*

7. Please list in the tables below the transboundary basins (rivers and lakes and aquifers) in your country’s territory and provide the following information for each of them:
  - (a) The country/ies with which the basin is shared;
  - (b) The surface area of the basin (the catchment of rivers or lakes and the aquifer in the case of groundwater) within the territory of your country (in square kilometres (km<sup>2</sup>));
  - (c) Whether a map and/or a geographical information system (GIS) shapefile of the basin has been provided;
  - (d) Whether there is an arrangement in force for the basin;
  - (e) The verification of each of the four criteria to assess operability;

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<sup>a</sup> Available from the UN-Water website: <https://www.sdg6monitoring.org/indicators/target-65/indicators652/> (updated version “2020”).

(f) The surface area of the basin within the territory of your country which is covered by a cooperation arrangement that is operational according to the above criteria.

8. In case an operational arrangement is in place only for a sub-basin or a portion of a basin, please list this sub-basin just after the transboundary basin it is part of. In case there is an operational arrangement for the whole basin, do not list sub-basins in the table below.

### Tables of Areas of Basins

Table 1 – Transboundary river or lake basin (Primary source – Overview of water resources availability and utilisation in Mozambique)

Name of transboundary river or lake basin/sub-basin	It is a basin or a sub-basin? <sup>b</sup>	Countries shared with	Surface area of the basin/sub-basin (in km <sup>2</sup> ) within the territory of the country	Map and/or GIS shapefile provided (yes/no)	Covered by an arrangement (entirely, partly, no)	Criterion 1 applied (yes/no)	Criterion 2 applied (yes/no)	Criterion 3 applied (yes/no)	Criterion 4 applied (yes/no)	Surface area of the basin/sub-basin (in km <sup>2</sup> ) covered by an operational arrangement within the territory of the country
Zambeze	Basin	Angola, Zambia, Malawi, Zimbabwe, Tanzania, Moçambique, Botswana, Namibia	To be confirmed in the joint studies	yes	yes	yes	Yes	Yes	Yes	140.000, total area
Pungue	Basin	Mozambique, Zimbabwe	To be confirmed in the joint studies	Yes	yes	Yes	Yes	Yes	Yes	28.000
Buzi	Basin	Mozambique, Zimbabwe	To be confirmed in the joint studies	Yes	yes	Yes	Yes	Yes	Yes	256.00
Save	Basin	Mozambique, Zimbabwe	To be confirmed in the joint studies	Yes	yes	Yes	Yes	Yes	Yes	225.75
Rovuma	Basin	Moçambique, Tanzania	To be confirmed in the joint studies	Yes	yes	Yes	Yes	Yes	Yes	101.160

<sup>b</sup> List sub-basins after the basin they belong to.

Name of transboundary river or lake basin/sub-basin	It is a basin or a sub-basin? <sup>b</sup>	Countries shared with	Surface area of the basin/sub-basin (in km <sup>2</sup> ) within the territory of the country	Map and/or GIS shapefile provided (yes/no)	Covered by an arrangement (entirely, partly, no)	Criterion 1 applied (yes/no)	Criterion 2 applied (yes/no)	Criterion 3 applied (yes/no)	Criterion 4 applied (yes/no)	Surface area of the basin/sub-basin (in km <sup>2</sup> ) covered by an operational arrangement within the territory of the country
Limpopo	Basin	Zimbabwe Mozambique Botswana South Africa	To be confirmed in the joint studies	Yes	Yes	Yes	Yes	Yes	Yes	79.600
Inkomati	Basin	South Africa, Eswatini Mozambique	To be confirmed in the joint studies	No	entirely	yes	yes	yes	yes	14.925, total area
Maputo-Usutu-Pongola	Basin	Eswatini Mozambique South Africa	To be confirmed in the joint studies	No	entirely	yes	yes	yes	yes	1.570, Total area
<b>(A)</b> Total surface area of transboundary basins/sub-basins of rivers and lakes covered by operational arrangements within the territory of the country (in km <sup>2</sup> ) (do not double count sub-basins)										16.495
<b>(B)</b> Total surface area of transboundary basins of rivers and lakes within the territory of the country (in km <sup>2</sup> ) (do not double count sub-basins)			To be confirmed in the joint studies							

Table 2 - Transboundary aquifers (please add rows as needed)

Name of the transboundary aquifer	Countries shared with	Surface area of the aquifer <sup>c</sup> (in km <sup>2</sup> ) within the territory of the country	Map and/ or GIS shapefile provided (yes/no)	Covered by an aquifer specific arrangement (entirely, partly, no)	Covered within an arrangement not specific to the aquifer <sup>d</sup> (entirely, partly, no)	Criterion 1 applied (yes/no)	Criterion 2 applied (yes/no)	Criterion 3 applied (yes/no)	Criterion 4 applied (yes/no)	Surface area of the aquifer (in km <sup>2</sup> ) covered by an operational arrangement within the territory of the country
Coastal Sedimentary VI	Mozambique	To be confirmed in the joint studies	no	no	no	yes	yes	yes	yes	10 230
Rhyolite-Breccia	Mozambique, Eswatini	To be confirmed in the joint studies	no	no	no	yes	yes	yes	yes	4 916
<b>(C) Sub-total: surface area of transboundary aquifers covered by operational arrangements (in km<sup>2</sup>)</b>										<b>178,392*</b>

<sup>c</sup> For a transboundary aquifer, the extent is derived from the aquifer system delineation which is commonly done relying on information of the subsurface (notably the extent of geological formations). As a general rule, the delineation of aquifer systems is based on the delineation of the extent of the hydraulically connected water-bearing geological formations. Aquifer systems are three-dimensional objects and the aquifer area taken into account is the projection on the land surface of the system. Ideally, when different aquifer systems not hydraulically connected are vertically superposed, the different relevant projected areas are to be considered separately, unless the different aquifer systems are managed conjunctively.

<sup>d</sup> In the text of the agreement or arrangement or in the practice.

<i>Name of the transboundary aquifer</i>	<i>Countries shared with</i>	<i>Surface area of the aquifer<sup>c</sup> (in km<sup>2</sup>) within the territory of the country</i>	<i>Map and/ or GIS shapefile provided (yes/no)</i>	<i>Covered by an aquifer specific arrangement (entirely, partly, no)</i>	<i>Covered within an arrangement not specific to the aquifer<sup>d</sup> (entirely, partly, no)</i>	<i>Criterion 1 applied (yes/no)</i>	<i>Criterion 2 applied (yes/no)</i>	<i>Criterion 3 applied (yes/no)</i>	<i>Criterion 4 applied (yes/no)</i>	<i>Surface area of the aquifer (in km<sup>2</sup>) covered by an operational arrangement within the territory of the country</i>
<b>(D)</b> <b>Total surface area of transboundary aquifers (in km<sup>2</sup>)</b>		<b>To be confirmed in the joint studies *</b>								

\*Full extent for all aquifers unknown

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## Indicator value for the country

### Surface waters:

Percentage of surface area of transboundary basins of rivers and lakes covered by an operational arrangement:

### Aquifers:

Percentage of surface area of transboundary aquifers covered by an operational arrangement:

Not fully delineated but covered by operational arrangement  $C/D \times 100 = 100\%$

### Sustainable Development Goal indicator 6.5.2:

Percentage of surface area of transboundary basins covered by an operational arrangement:

### Spatial information

If a map (or maps) of the transboundary surface water catchments and transboundary aquifers (i.e., “transboundary basins”) is available, please consider attaching them. Ideally, shapefiles of the basin and aquifer delineations that can be viewed in GIS should be sent.

### Additional information

If the respondent has comments that clarify assumptions or interpretations made for the calculation, or the level of certainty of the spatial information, please write them here:

1. The Maputo and Incomati basins are distinct and contiguous units, but are managed as a one because they are shared by the same three co-basin states.
2. For aquifers, although the full extent of areas of the Karoo, Stampriet, Ramotswa aquifers has not yet been fully determined, the agreements for surface water extend to the groundwater, and all criteria are met.
3. The current understanding of transboundary aquifers is meagre, translating into paucity of water resource management plans of the resources. This is a gap that the agreements are addressing.
4. Present international law does not adequately address the issues concerning spatial flow of groundwaters and has limited application.
5. The management plans for transboundary aquifers is modelled along and attaches to those of the surface water resources.



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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?

Yes /No

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

#### **Over-arching agreements**

1. [SADC Revised Protocol on Shared water courses (07 August 2000)
2. Tripartite Interim Agreement Between The Republic of **Mozambique and The Republic of South Africa and The Kingdom of Swaziland** for Co-operation on the Protection and Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses (2002)
3. Tripartite Interim Agreement Between The Republic of Mozambique and The Republic of South Africa and The Kingdom of Swaziland for for Co-operation on the Protection and Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses – **Resolution of the Tripartite Permanent Technical Committee on exchange of Information and water quality** (13 August 2002)
4. Agreement on the Establishment of the Limpopo Watercourse Commission (**Botswana, Mozambique, South Africa, Zimbabwe**).
5. The Limpopo Basin Permanent Technical Committee (LBPTC) with South Africa, Mozambique, and Zimbabwe (1986);

#### **Binational Agreements**

6. Agreement on the Establishment and functioning of the Joint Water Commission between **Mozambique and South Africa** (26/07/1996)
7. Agreement on the Establishment and functioning of the Joint Water Commission between Mozambique and Eswatini
8. Agreement on the Establishment and functioning of the Joint Water Commission between Mozambique and Zimbabwe
9. Agreement on the Establishment and functioning of the Joint Water Commission between Mozambique and Tanzania
- 10.

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

**Achievements**

- identification of shared benefits,
- Integrated Water Resource Management Plan/monitoring tool,
- Limpopo River Basin Disaster Preparedness Action Plan,
- Limpopo River Basin atlas edition of the Limpopo River Basin: changes, challenges and opportunities,
- Improve Groundwater resource management in the basin through establishment of G/W task forces

**Keys to Successes**

- The drafting of the agreement for co-operation
- The existence of the SADC Protocol on shared water courses as the take off position for the countries
- The existence of SADC as a regional Integration body
- Adoption of the international policy guidelines of IWRM by all countries
- Political will to jointly manage the water resources
- Relative peace and security in the region, allowing travel across the countries for meetings

(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*):

[**Agreement attached,**

[http://www.limpopo.riverawarenesskit.org/LIMPOPORAK\\_COM/INDEX.HTM](http://www.limpopo.riverawarenesskit.org/LIMPOPORAK_COM/INDEX.HTM) ]

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

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*)?

- |  |                                     |
|--|-------------------------------------|
| Plenipotentiaries  | <input type="checkbox"/>            |
| Bilateral commission                                     | <input checked="" type="checkbox"/> |
| Basin or similar commission                              | <input checked="" type="checkbox"/> |
| Expert group meeting or meeting of national focal points | <input type="checkbox"/>            |

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

## INCOMAPUTO

Name of the transboundary basin,-sub-basin, part of a basin or group of basins:

[IncoMaputo]

List of the riparian States: [Eswatini, Mozambique, South Africa]

**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

Unconfined aquifer with no or limited relation with surface water

Confined aquifer connected to surface water

Confined aquifer with no or limited relation with surface water

Other

Please describe: [fill in]

Unknown

**Percentage of your country's territory within the basin, sub-basin, part of a basin or group of basins:** [3.93 % =47,970 km<sup>2</sup>/ 1,221,037 km<sup>2</sup>]

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

One or more agreements or arrangements exist and are in force

Agreement or arrangement developed but not in force

Agreement or arrangement developed, but not in force for all riparians

*Please insert the name of the agreement(s) or arrangement(s) [none]*

1. Agreement between the Government of The Republic of **South Africa**. The Government of The Kingdom of **Swaziland** and The Governemnt of the People's Republic of **Mozambique relative to the Establishment of a Tripartite Permanant Committee** (17 February 1983)
2. Tripartite Interim Agreement Between The Republic of **Mozambique** and The Republic of **South Africa** and The Kingdom of **Swaziland** for Co-operation on the Protection and Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses (2002)
3. Tripartite Interim Agreement Between The Republic of **Mozambique** and The Republic of **South Africa** and The Kingdom of Swaziland for for Co-operation on the Protection and Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses – Resolution of the Tripartite Permanent

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4. Agreement on the Establishment and Functioning of a Joint Water Commissions between The Government of Republic of **South Africa** and The Government of Mozambique (26 June 1996)
  5. Protocol on SADC shared water resources signed on the 7<sup>th</sup> of August of 2000, among South Africa, Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Republic of Mauritius, Mozambique, Namibia, Republic of Seychelles, Swaziland, Tanzania, Zambia, and Zimbabwe.

Agreement or arrangement is under development

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:* [There is no agreement in place so far as there has not been any notable use of water from these aquifers]

**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.**

**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?

Yes /No

If yes, does it cover the entire basin or group of basins and all riparian States?

Yes /No

Additional explanations? [Groundwater aquifers are not fully mapped]

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

Yes /No

Additional explanations? [fill in]

Which States (including your own) are bound by the agreement or arrangement?

*(Please list):* [Mozambique, South Africa and the Kingdom of Eswatini]

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

Yes /No

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

- (c) What is the sectoral scope of the agreement or arrangement?

All water uses

A single water use or sector

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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]

(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

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

Maintenance of joint pollution inventories

Elaboration of joint water quality objectives

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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]

(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]

(f) What are the main achievements in implementing the agreement or arrangement and what were the keys to achieving such success? **[Integrated Water Resource Management is successfully achieved]**

(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*): **[attached]**

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

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*)?

Plenipotentiaries

Bilateral commission

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Basin or similar commission

Expert group meeting or meeting of national focal points

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?

Yes /No

(c) Which States (including your own) are members of the joint body or mechanism? (*Please list*): [Mozambique - Eswatini, Mozambique South - Africa, Mozambique - Zimbabwe, Mozambique - Tanzania]

(d) Are there any riparian States that are not members of the joint body or mechanism? (*please list*): [no]

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

No cooperation

They have observer status

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

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

A secretariat

*If the secretariat is a permanent one, is it a joint secretariat or does each country host its own secretariat? (Please describe): [The 3 countries (South Africa, Mozambique and Eswatini) have appointed an interim Joint Secretariat based in Eswatini, The 8 countries established Permanent Secretariat based in Zimbabwe (ZAMCOM Secretariate), The 4 countries established Permanent Secretariat based in Mozambique (LIMCOM)]*

A subsidiary body or bodies

*Please list (e.g., working groups on specific topics): [no]*

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

(g) What are the tasks and activities of this joint body or mechanism?<sup>1</sup>

Identification of pollution sources

Data collection and exchange

Joint monitoring

Maintenance of joint pollution inventories

Setting emission limits

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<sup>1</sup> This may include tasks according to the agreement or tasks added by the joint body, or its subsidiaries. Both tasks which joint bodies coordinate and tasks which they implement should be included.

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- Elaboration of joint water quality objectives
  - Management and prevention of flood or drought risks
  - Preparedness for extreme events, e.g., common early warning and alarm procedures
  - Surveillance and early warning of water related disease
  - Water allocation and/or flow regulation
  - Policy development
  - Control of implementation
  - Exchange of experience between riparian States
  - Exchange of information on existing and planned uses of water and related installations
  - Settling of differences and conflicts
  - Consultations on planned measures
  - Exchange of information on best available technology
  - Participation in transboundary EIA
  - Development of river, lake or aquifer basin management or action plans
  - Management of shared infrastructure
  - Addressing hydromorphological alterations
  - Climate change adaptation
  - Joint communication strategy
  - Basin-wide or joint public participation and consultation of, for example, basin management plans
  - Joint resources to support transboundary cooperation
  - Capacity-building
  - Any other tasks (*please list*): [fill in]

(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   
*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



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*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): [ No regular exchange of data]

(i) Does the joint body or mechanism, or its subsidiary bodies meet regularly?

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?

- i. [Intergrated water resources management studies /measures of the basin]
- ii. Communication and information sharing on issues through regular meetings and stakeholder participation
- iii. Joint studies
- iv. Inreased inclination towards establishment a permanant basin commission

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

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? [All coastal states are riparian and are members of the basin arrangement.]*

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?

Yes /No

*If yes, please provide further details: [The basin has been coordinated and shared governance through the TPTC, LIMCOM and ZAMCOM. The member states have recently agreed to establish a permant basin commission for Incomati and Maouto (IncoMaputo) River in line with the Revised SADC Protocol on shared watercourses. This structure of IncoMaputo is being establishment in Eswatini. For LIMCOM is in Mozambique and for ZAMCOM is in Zimbabwe. For Buzi, Pungoe and Save the Parties (Mozambique and Zimbabwe are*

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palining to establish the interim secretariat in short term). The near future is to establish the permanent secretariat (BUPUSA).

Studies for joint management plans have been undertaken regarding, for example, necessary communication and concurrence for any water resource related development project, minimum cross-border streamflows, among others.]

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?

Regulation of urbanization, deforestation, and sand and gravel extraction.

Environmental flow norms, including consideration of levels and seasonality

Water quality protection, e.g. nitrates, pesticides, faecal coliforms, heavy metals

Water-related species and habitats protection

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

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?

Yes /No

- (b) If yes, how often:

More than once per year

Once per year

Less than once per year

- (c) Please describe how information is exchanged (**Through joint meetings and via email communication, and during rain season, and if necessary**)

- (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

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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:*

[]

(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*): [Currently the lack of a permanent River Basin organisation (Secreteriat) makes it difficult to house and coordinate the data/list of common interest activities below. The structure is still being considered for establishment.]

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*): [Facilitates floods early warning system, flow regimes adjustment and adherence to water quality standards]

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

Yes /No

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

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	<i>Hydrological</i>	<i>Ecological</i>	<i>Chemical</i>
Border surface waters	<input checked="" type="checkbox"/>		
Surface waters in the entire basin	<input checked="" type="checkbox"/>		
Surface waters on the main watercourse	<input checked="" type="checkbox"/>		

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	<i>Hydrological</i>	<i>Ecological</i>	<i>Chemical</i>
Surface waters in part of the basin please describe [ <b>Joint Monitoring in Umbeluzi Basin</b> ]	<input checked="" type="checkbox"/>		
Transboundary aquifer(s) (connected or unconnected)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aquifer(s) in the territory of one riparian hydraulically connected to a transboundary river or lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

National monitoring stations connected through a network or common stations

*Please describe:*

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:

- i. **[Ensuring flow required at the appropriate control point for the downstream country (Mozambique) and upstream country (Eswatini) met]**
- ii. **Control and operational rules for the basin and sub-basins, e.g Crocodile and Komati in across the South Africa to Mozambique**
- iii. **Monitoring instrumentation and data transmission network is not fully integrated]**

(d) Please describe any difficulties experienced with joint monitoring:

**[Implementation of the agreement has not been followed through, even though the agreement goes to the extent of specifying parameters]**

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

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]

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9. Have the riparian States agreed to use joint water quality standards?

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? [Eg. Regional, as specified in the Resolution of the Tripartite Permanent Technical Committee on exchange of Information and water quality, and in the Pungoe and Buzi agreement]*

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

Notification and communication

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

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

No measures

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

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

Notification and communication

Coordinated or joint alarm system for floods

Coordinated or joint alarm system for droughts

Joint climate change adaptation strategy

Joint disaster risk reduction strategy

Other (*please list*): [Though tools for joint early warning systems have been developed through joint studies , the lack of a permanent commission for Incomati and Maputo with office space to house these tools has prevented the joint application of those tools.]

No measures

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

12. Are procedures in place for mutual assistance in case of a critical situation?

Yes /No

*If yes, please provide a brief summary: [Not formalised but countries through the relevant ministry can approach each other for assistance e.g when there is flooding sometimes the relevant ministry to assist will be the defence force to facilitate quick evacuations and other relevant ministries]*

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?

Yes /No

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*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

Consultation on planned measures or river basin management plans<sup>2</sup>

Public involvement

Other (please specify): [fill in]

**Please remember to complete section II for each of the transboundary basins, sub-basin, part of a basin or group of basins. Please also remember to attach copies of agreements or arrangements, if any.**

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<sup>2</sup> Or, where applicable, aquifer management plans.

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**III.**

**IV. Final questions**

1.

5. Name and contact details of the person(s) who filled out the questionnaire (*please insert*): [Hilário Pereira and Justino Marrengula]

Signature: []

Date: [Tuesday, 31 August 2021]

Thank you very much for taking the time to complete this report.

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### Appendix 1: Sources of information

1. Various agreements between Mozambique and co-basin states
2. [http://www.limpopo.riverawarenesskit.org/LIMPOPORAK\\_COM/EN/GOVERNANCE/WATER\\_GOV  
ERNANCE\\_IN\\_THE\\_LIMPOPO/AGREEMENT.HTM](http://www.limpopo.riverawarenesskit.org/LIMPOPORAK_COM/EN/GOVERNANCE/WATER_GOV<br/>ERNANCE_IN_THE_LIMPOPO/AGREEMENT.HTM)
3. [http://www.fao.org/nr/water/aquastat/countries\\_regions/Profile\\_segments/MOZ-Intlss\\_eng.stm](http://www.fao.org/nr/water/aquastat/countries_regions/Profile_segments/MOZ-Intlss_eng.stm)
4. **D. Jui'zo and P. Hjorth** / Application of a district management approach to Southern African river basin systems: the case of the Umbeluzi, Incomati and Maputo river basins. *Water Policy 11 (2009) 719–730*
5. [https://www.google.com/search?q=maputo+basin&rlz=1C1GCEU\\_enZA821ZA821&oq=maputo+ba  
sin&aqs=chrome..69i57j0l2.6704j0j4&sourceid=chrome&ie=UTF-8](https://www.google.com/search?q=maputo+basin&rlz=1C1GCEU_enZA821ZA821&oq=maputo+ba<br/>sin&aqs=chrome..69i57j0l2.6704j0j4&sourceid=chrome&ie=UTF-8)
6. [www.Data.worldbank.org](http://www.Data.worldbank.org)



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## Appendix 2 – List of Agreements

1. SADC Revised Protocol on Shared water courses (07 August 2000)
2. Tripartite Interim Agreement Between The Republic of **Mozambique and The Republic of South Africa and The Kingdom of Swaziland** for Co-operation on the Protection and Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses (2002)
3. Agreement between the Republic of Botswana, Mozambique, South Africa and Zimbabwe on the establishment of the Limpopo Water Commission (LIMCOM) (27/11/2003)
4. The Limpopo Basin Permanent Technical Committee (LBPTC) with South Africa, Mozambique, and Zimbabwe (1986).
5. Agreement on the Establishment and functioning of the Joint Water Commission between Mozambique and South Africa (26/07/1996)
6. Tripartite Interim Agreement Between The Republic of **Mozambique** and The Republic of **South Africa** and The Kingdom of Swaziland for for Co-operation on the Protection and Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses – Resolution of the Tripartite Permanent Technical Committee on exchange of Information and water quality (13 August 2002).
7. Limpopo Watercourse Commission Agreement, between Mozambique, South Africa, Zimbabwe and Botswana. Actually the Agreement is being amended in order to include the Council of ministers as the highest organ of decision making.
8. Pungue Agreement, Between Mozambique and Zimbabwe.
9. Buzi Agreement, between Mozambique and Zimbabwe.
10. Agreement between the Government of the Republic of South Africa and the Government of the Republic of Mozambique on the establishment and functioning of the joint Water Resources commission, 26/06/1996.
11. ZAMCOM Agreement, between Mozambique, Zambia, Namibia, Angola, Tanzania, Malawi, Zimbabwe and Botswana, 13/10/2004

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**12. Shire Memorandum of Understanding between Mozambique, Malawi and Tanzania, 27/11/2003**