Transboundary River Basins Assessment: Global uses, downscaling opportunities and the road ahead

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Baseline key messages I

1. Environmental, human and agricultural water stresses often occur in the same transboundary river basins, resulting in competition for water between sectors and between countries.

2. Pollution risks in many transboundary river basins are high and projected to increase.

3. The threat to freshwater biodiversity is global. Extinction risk is moderate to very high in 70% of the area of transboundary river basins.

4. The construction of dams and water diversions is in progress or planned in many transboundary river basins, sometimes without adequate international water cooperation instruments.
Baseline key messages II

5. Transboundary river basins with high economic dependence on water resources, low levels of societal wellbeing and high exposure to floods and droughts have the highest climate-related risks.

6. Almost all deltas in transboundary river basins have moderate to very high risk for one or more indicator.

7. Four groups of transboundary river basins have been identified where the basins within each group have similar risk profiles.

8. Risks are projected to increase in the next 15-30 years, particularly for four hotspot regions: the Middle East, Central Asia, the Ganges-Brahmaputra-Meghna basin, and the Orange and Limpopo basins in Southern Africa.
4 projected ‘hot-spots’

**PROJECTED RISK HOTSPOTS**

**Middle East**
- 70% increase in population
- 36% increase in water withdrawals
- 25% decrease in water availability

**Central Asia**
- 37% increase in population
- 36% increase in water withdrawals
- 13% increase in water availability

**Orange and Limpopo basins**
- 24% increase in water withdrawals
- 96% increase in water availability
- 19% decrease in water availability

**Ganges-Brahmaputra-Meghna basin**
- 36% increase in population
- 50% increase in water withdrawals
- 18% decrease in water availability

**KEY FINDING**
Some regions are particularly exposed to socioeconomic developments and climate change, with projected risk increases across a number of indicators.
Transboundary Waters at UNEP-DHI: Programme

• UNEP-DHI: transboundary water management part of work programme for 20 years – will continue.

• UNEP-DHI and partners committed to continuing collaboration and open to new opportunities
Significance of Global Assessment

- Supporting monitoring and assessment mechanisms
- Informing investment
- Informing governance
- Informing science
Variety of potential users

- Practitioners
- SGDs
- Students
- Communities of Research
- Basins
- Water conventions
### Potential global / regional uses

| Support to GEF (& others) programming | Basin and region prioritization  
|--------------------------------------|---------------------------------  
|                                      | Issue prioritization            ।
|                                      | Impact assessment                ।
| Support implementation of UN-Watercourses Convention | Knowledge platform  
|                                                      | Basin Profiles/Briefs           |
## Other potential global/regional users

<table>
<thead>
<tr>
<th>UNECE Water Convention</th>
<th>Global, indicator-based assessment to complement/enhance pan-European narrative assessments</th>
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<tbody>
<tr>
<td>Ramsar Convention</td>
<td>Ecosystems indicators (e.g. Wetland Disconnectivity, Extinction risk)</td>
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<tr>
<td>UN WWAP (WWDR), UNEP (GEO and UNEP-Live), World Bank (Spatial Agent)</td>
<td>Contribution to global assessments, data harvesting and visualisation platforms.</td>
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**Others**

- *World’s Large Rivers Initiative*
- *WWF*
- *INBO*
- *IW:LEARN*
- *SIWI-UNESCO International Centre for Water Cooperation*
- *Educational material*
## Support to SDG-6 Reporting

| 6.1. and 6.2. WASH | TWAP Socioeconomic indicators  
<table>
<thead>
<tr>
<th></th>
<th>• Societal well-being</th>
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| 6.3. Water Quality | TWAP Water Quality indicators  
|                   | • Nutrient pollution  
|                   | • Wastewater pollution (*ind. 6.3.1.) |
| 6.4. WRM          | TWAP Water Quantity indicators  
|                   | • Environmental water stress (*ind. 6.4.2)  
|                   | • Human water stress (*ind. 6.4.2)  
|                   | • Agricultural water stress (*ind. 6.4.2) |
| 6.5. IWRM         | TWAP Governance indicators  
|                   | • Enabling environment (*ind. 6.5.1)  
|                   | • Legal frameworks (*ind. 6.5.2) |
| 6.6. Water-related ecosystems | TWAP Ecosystems indicators  
|                   | • Wetland disconnectivity  
|                   | • Extinction risk  
|                   | • Threat to fish  
|                   | • Ecosystem impacts from dams |
### Other SDGs

<table>
<thead>
<tr>
<th>SDG Number</th>
<th>Focus Area</th>
<th>TWAP Indicators</th>
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<tbody>
<tr>
<td>11.5</td>
<td>Disasters</td>
<td>- Societal well-being</td>
</tr>
<tr>
<td>11.6</td>
<td>Municipal and other waste</td>
<td>- Wastewater pollution</td>
</tr>
<tr>
<td>13.1</td>
<td>Climate-related hazards</td>
<td>- Exposure to floods and droughts</td>
</tr>
<tr>
<td>15.5</td>
<td>Loss of biodiversity</td>
<td>- Wetland disconnectivity</td>
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<tr>
<td></td>
<td></td>
<td>- Extinction risk (*ind. 15.5.1)</td>
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<td></td>
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<td>- Threat to fish</td>
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Challenges of Scale & Downscaling

- Resolution of datasets and models
  - Led to higher uncertainty for smaller basins & BCUs
  - But higher resolution datasets becoming available now
- Aggregation
  - From national data to basin results and vice versa
- Application of universal thresholds for each indicator
- Selection of issues (indicators) relevant to majority of basins.

- SCOPE FOR DOWNSCALING
## Current basin uses and opportunities for downscaling

<table>
<thead>
<tr>
<th>Current uses</th>
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<tr>
<td>➢ Common baseline: allows for comparison between basins and over time</td>
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<tr>
<td>➢ Fills data gaps in data poor areas</td>
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<tr>
<td>➢ Identification of potential risks (for further analysis)</td>
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<tr>
<td>➢ Fostering cooperation within basins &amp; between basins</td>
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<tr>
<td>Potential</td>
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<tr>
<td>➢ Additional issues, same framework</td>
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<tr>
<td>➢ Finer resolution</td>
</tr>
<tr>
<td>➢ Validation of global results, improvements in datasets &amp; models</td>
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Repeat assessment

1. Tracking progress compared to baseline
2. Refining methodology of global assessments
3. Support to updates of key global datasets
4. Providing tracking support on aspects of SDGs against baseline in transboundary basins
5. Potential future Level 2 assessments of selected basins
Thank you

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http://twap-rivers.org/