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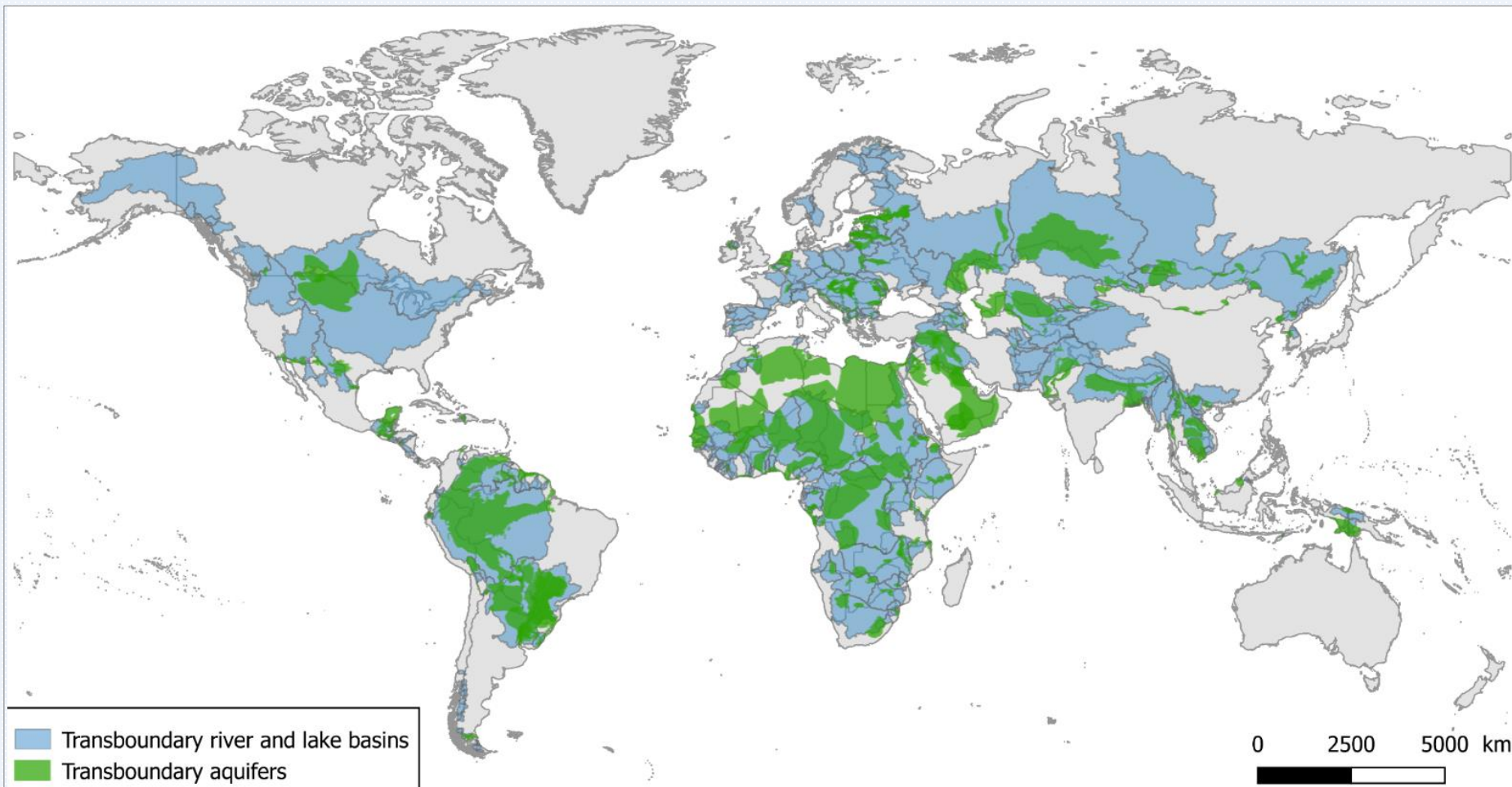
Reporting on transboundary aquifers: Challenges and tools

Supporting the monitoring and implementation of the SDGs in the Arab region: Transboundary water cooperation SDG 6 Indicator 6.5.2

Chloé Meyer
Project Officer
Division of Water Sciences
UNESCO



592 transboundary aquifers worldwide

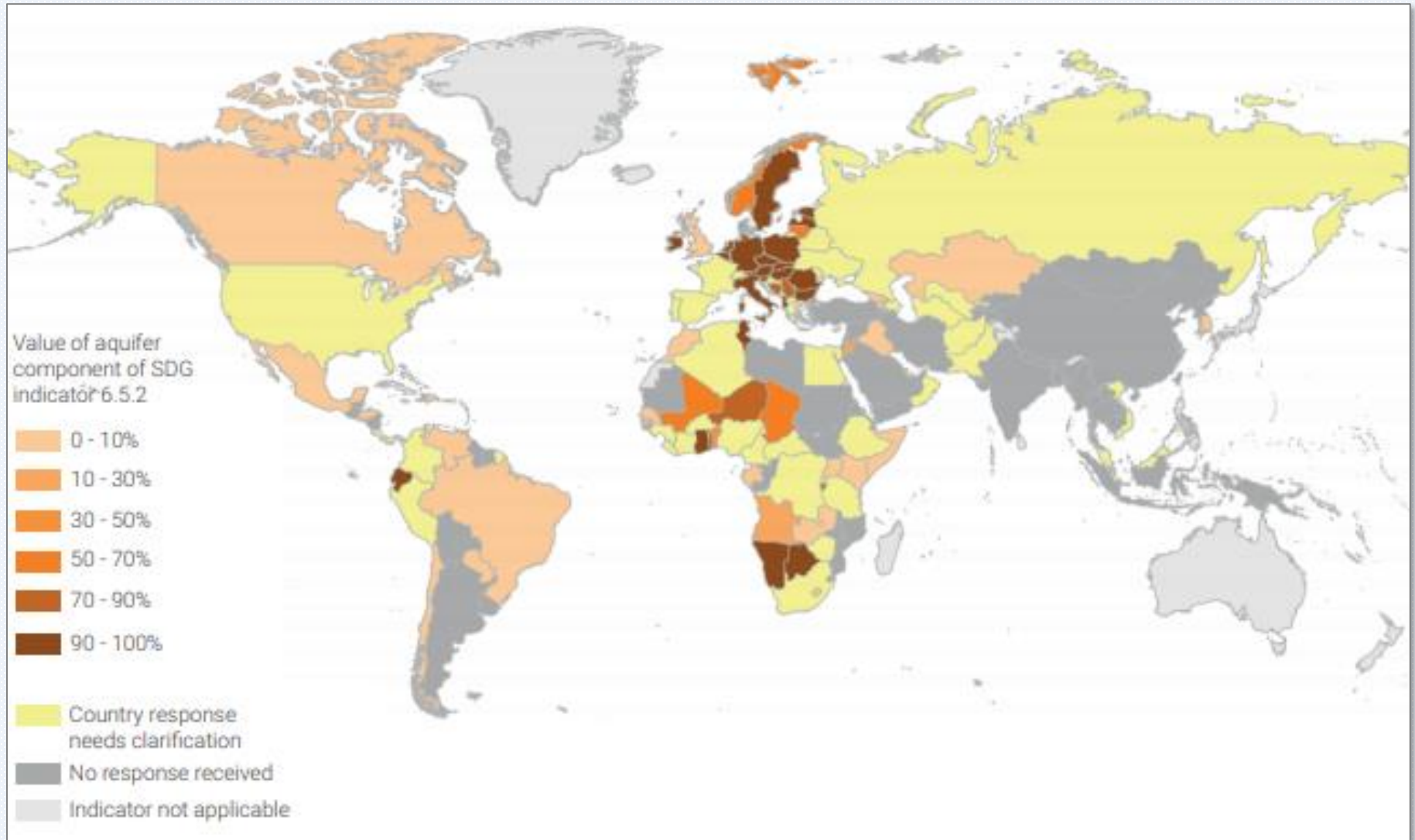


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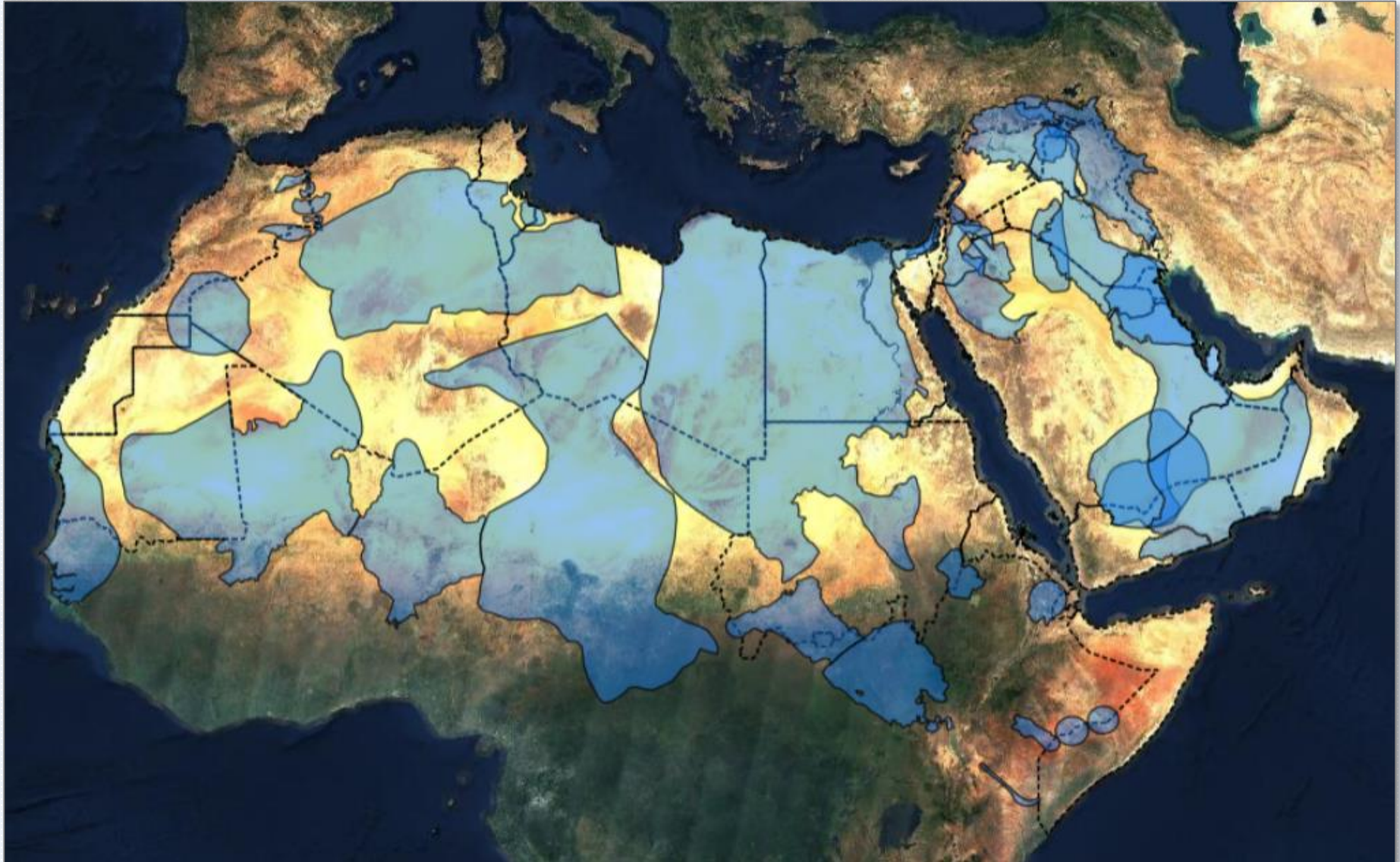
Supporting the monitoring and implementation of the SDGs in the Arab region:
Transboundary water cooperation SDG 6 Indicator 6.5.2



Cooperation on transboundary aquifers: 1st reporting



Transboundary aquifers in the Arab states region

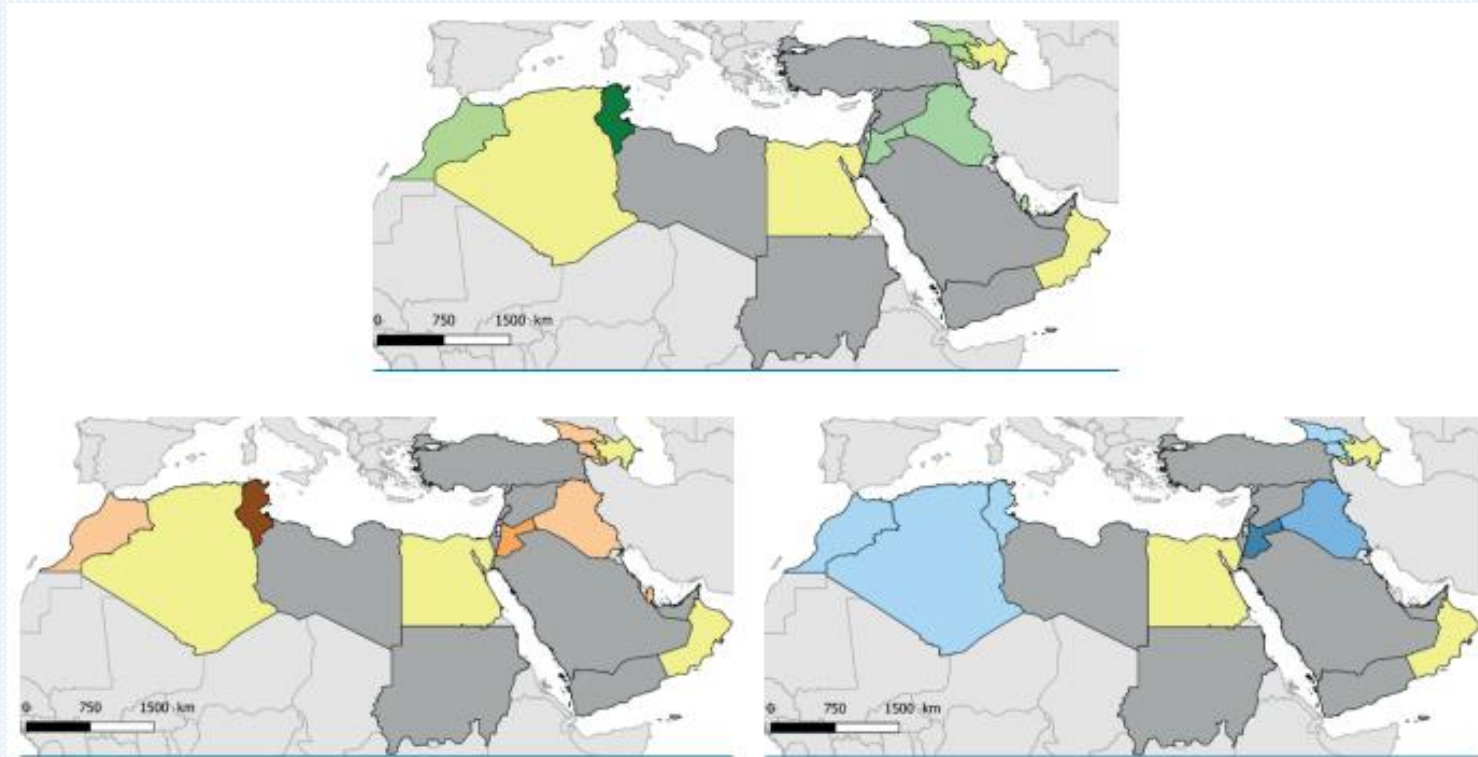


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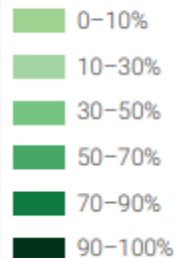
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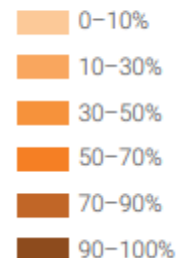
Reporting on transboundary aquifer during the 1st phase



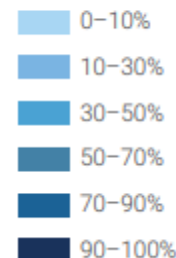
Value of SDG indicator 6.5.2



Value of aquifer component of SDG indicator 6.5.2



Value of river and lake basin component of SDG indicator 6.5.2



■ Country response needs clarification

■ No response received

■ Country not considered for regional analysis



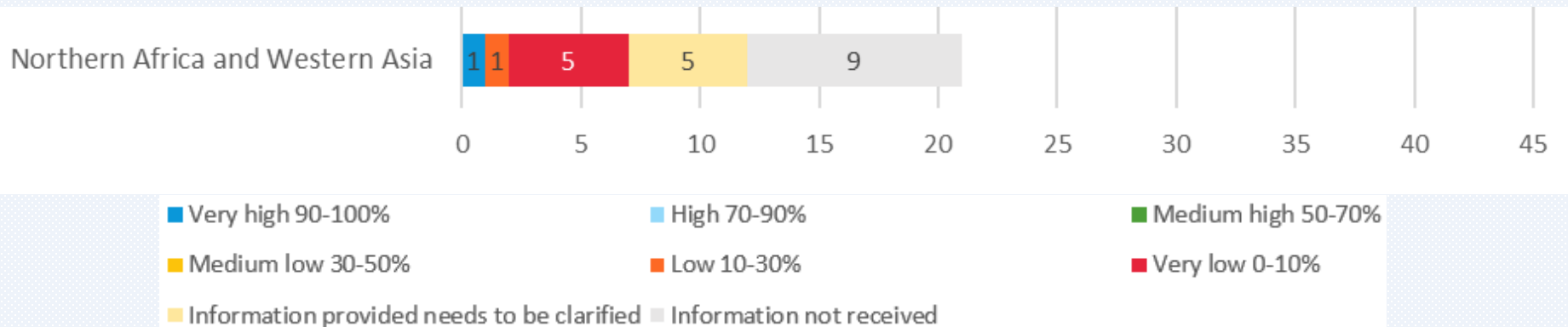
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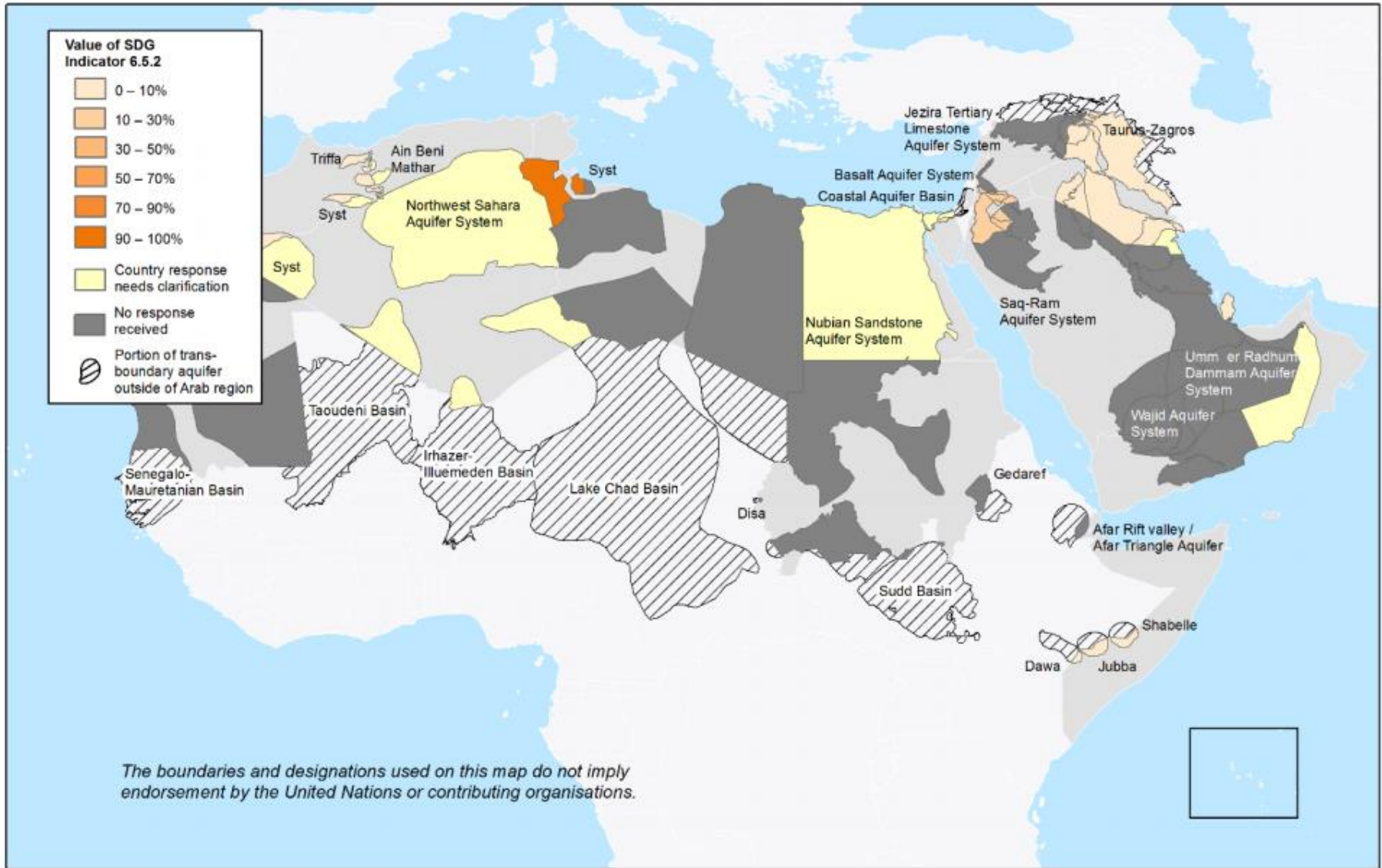


Reporting on transboundary aquifer during the 1st phase

Country	Surface water component (%)	Aquifer Component (%)	SDG indicator 6.5.2 (%)
Algeria	0	-	-
Egypt	-	-	-
Iraq	17.3	0	13.5
Jordan	61.7	13.9	21.9
Kuwait	N	-	-
Morocco	0	0	0
Qatar	N	0	0
Somalia	0	0	0
Tunisia	0	100	80.5



Reporting on transboundary aquifer during the 1st phase



In: Progress on Shared Water Resources Management in the Arab Region: Regional baseline for SDG Indicator 6.5.2

Challenges faced during the 1st reporting exercise

Absence of reporting under SDG Indicator 6.5.2, but information reported under SDG Indicator 6.5.1:

Country	Shared water body
Libya	North Western Sahara Aquifer System (Algeria, Tunisia), Nubian Sandstone Aquifer System (Chad, Egypt, Sudan) (Note that these two arrangements were mentioned in the reporting under SDG indicator 6.5.1)
Saudi Arabia	Saq-Disi aquifer (Jordan) (This arrangement is mentioned in the reporting under SDG indicator 6.5.1 and by Jordan under SDG indicator reporting 6.5.2)
Sudan	Nubian Sandstone Aquifer System (Chad, Egypt, Libya) (The arrangements and initiatives for these two shared water bodies were mentioned in the reporting under SDG indicator 6.5.1)

Challenges faced during the 1st reporting exercise

- **Assumed equivalence between water scarcity and water (in)security**
- **Insignificant use of transboundary aquifers**
- **Superposition of aquifers, scientific uncertainty (data) + multiple counting of areas**

Good practices and lessons learnt

Some reports are the product of extensive coordination:

- Different approaches to group, collect and report information
- Opportunity to strengthen national coordination, cooperation and data sharing
- Impact in terms of visibility and increased awareness of national and cross-border issues

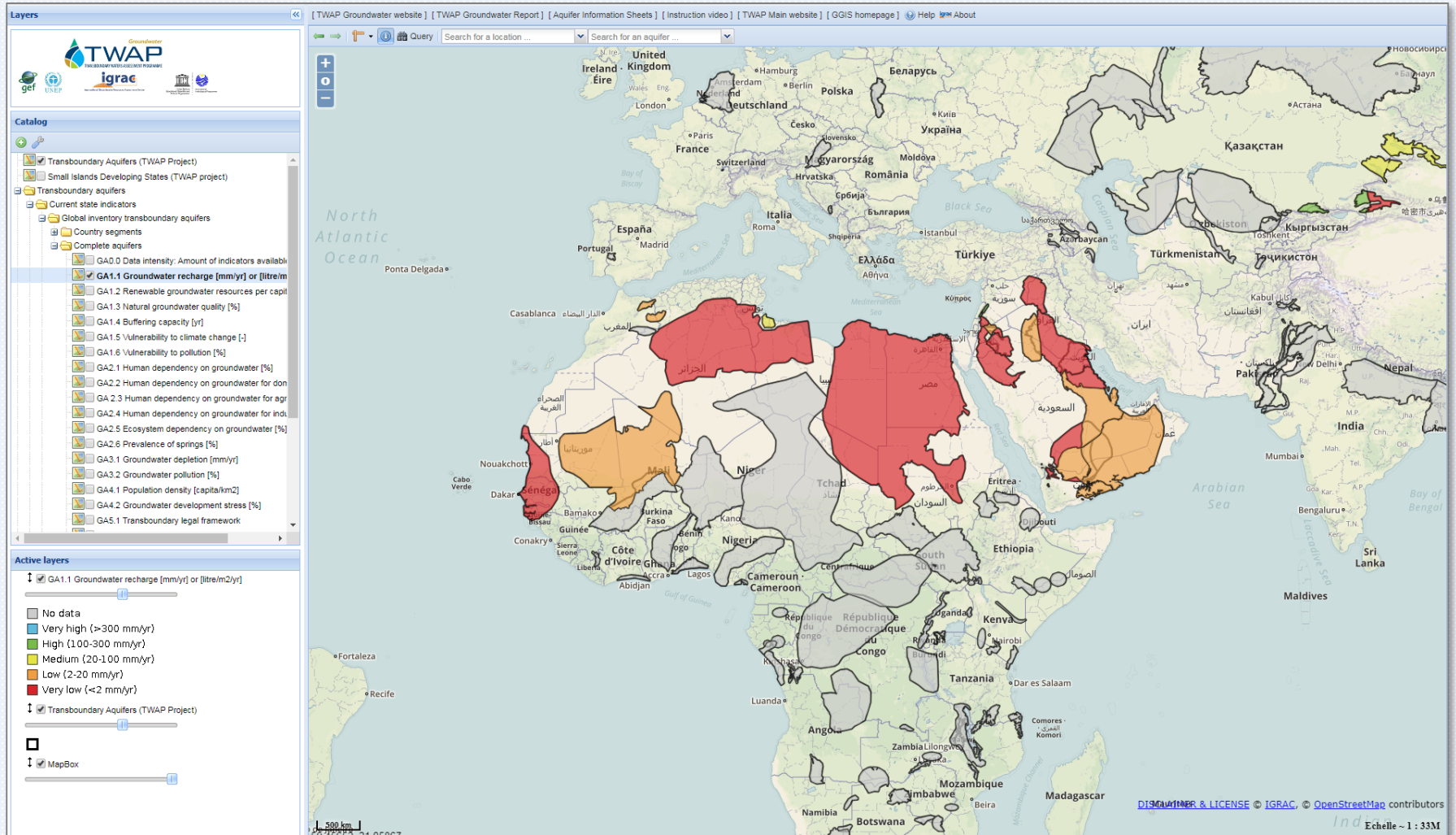
Reported information:

- Wealth of data that had never been transmitted before
- Groundwater data is a particular challenge
- Long-term process to make the best use of international sources

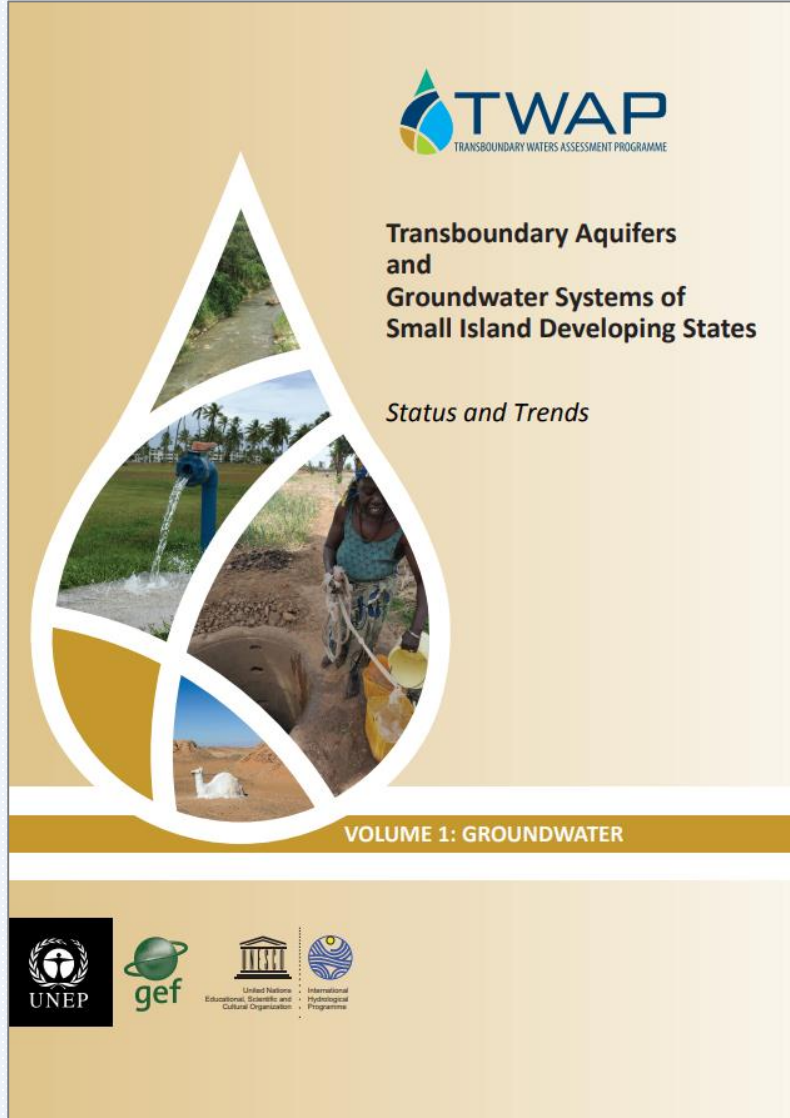
How to improve the reporting: tools and materials

Transboundary Waters Assessment Programme Information System on transboundary aquifers

<https://apps.geodan.nl/igrac/ggis-viewer/viewer/twap/public/default>



How to improve the reporting: tools and materials



First comprehensive indicator-based global assessment of status and trends in transboundary aquifers

How to improve the reporting: tools and materials

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Country and aquifer briefs


Here you can find information briefs on the groundwater situation per country and per transboundary aquifer. The main indicators and additional information on the groundwater conditions in the respective countries/aquifer are described. Data is extracted from the other GGIS modules, while additional data is provided by national experts from the region.

The table below provides a list of all regions. You can use the search functionality in the right corner to search the information brief you are interested in. You can search by country, aquifer name, aquifer code, or by country where the aquifer is situated.

Note: The development of the country briefs is still ongoing an not all briefs are completed yet.

Show entries Search:


Name	Code	Type	Countries	Print
Sonoyta-Papagos	10N	aquifer	Mexico, United States of America	Get brief
Nogales	11N	aquifer	Mexico, United States of America	Get brief
Delta del Rio Motagua	12C	aquifer	Guatemala, Honduras	Get brief
Santa cruz	12N	aquifer	Mexico, United States of America	Get brief
Puyango-Tumbes-catamayo-chira	12S	aquifer	Ecuador, Peru	Get brief
San Pedro	13N	aquifer	Mexico, United States of America	Get brief
Amazonas	13S	aquifer	Argentina, Bolivia, Brazil, Colombia, Ecuador, Paraguay, P...	Get brief
Esquipulas-Ocoatepeque-citala	14C	aquifer	El Salvador, Guatemala, Honduras	Get brief
conejos Medanos-Bolson de la Mesilla	14N	aquifer	Mexico, United States of America	Get brief
Tititaca	14S	aquifer	Bolivia, Chile, Peru	Get brief
Bolson del Hueco-Valle de Juarez	15N	aquifer	Mexico, United States of America	Get brief
Pantanal	15S	aquifer	Bolivia, Brazil, Paraguay	Get brief
Edwards-Trinity-El Burro	16N	aquifer	Mexico, United States of America	Get brief
Agua Dulce	16S	aquifer	Bolivia, Brazil, Paraguay	Get brief
Estero Real-Rio Negro	17C	aquifer	Honduras, Nicaragua	Get brief
Cuenca Baja del Rio Bravo-Grande	17N	aquifer	Mexico, United States of America	Get brief

Transboundary Aquifer Information Sheet 

10N - Sonoyta-Pápagos


Geography
 Total area TBA (km²): 16 000
 No. countries sharing: 2
 Countries sharing: Mexico, United States of America
 Population: 47 000
 Climate zone: Arid
 Rainfall (mm/yr): 230

Hydrogeology
 Aquifer type: Multiple layers hydraulically connected
 Degree of confinement: Whole aquifer unconfined
 Main Lithology: Sediment - Sand



No cross-section available

Map and cross-section are only provided for illustrative purposes. Dimensions are only approximate.



10N - Sonoyta-Pápagos

Indicators from Global Inventory

Groundwater depletion (mm/yr)	Groundwater pollution (N)	Population density (Person/km ²)	Groundwater development stress (N)	Transboundary legal framework (Score) (S)
D	A	4	260	A
1				
3				


(N) [yr] divided by the surface area (m²) of the complete country; (A) percentage of surface area of aquifer where the natural standards; (B) Some pollution has been identified; Positive number (area of aquifer); (C) After abstraction divided by recharge; (D) Agreement signed by all parties; (E) Agreement with limited agreement under preparation or available as an unsigned draft; (F) Framework differs between Aquifer States (see data at National level); (G) Institution fully operational; (H) Dedicated transboundary institutional/Domestic institution fully operational; (I) National/Domestic institution exists for TBA management; (J) Institutional Framework (level); (K) considered un-realistic and therefore removed from the table.

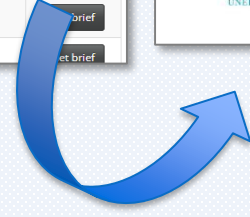
Table from Global Inventory

Degree of confinement	Predominant aquifer storage	Predominant type of porosity (or voids)	Secondary porosity
Whole aquifer confined	Sediment - Sand	High primary porosity; fine/medium sedimentary deposits	Secondary porosity; Fractures

United States of America
TBA level

* Including aquitards/aquicludes
 x A value was provided in the questionnaire, but it was considered un-realistic and therefore removed from the table.





How to improve the reporting: tools and materials

UNESCO IHP's Water Information and Network System: <http://ihp-wins.unesco.org/>

The screenshot displays the UNESCO IHP WINS website interface. At the top, there is a navigation bar with the UNESCO logo, the IHP WINS logo, and menu items: Couches, Cartes, Documents, Utilisateurs, and Groupes. A search bar is located on the right with the text 'Rechercher' and a magnifying glass icon. Below the navigation bar, the main heading reads 'Transboundary Aquifers of the World (2015)'. The central part of the page features a world map with blue shaded regions representing transboundary aquifers. The map includes a scale bar (0 to 2000 km / 0 to 1000 mi) and a scale dropdown menu set to 1:139770286. To the right of the map, there are several interactive buttons: 'Télécharger la couche' (Download the layer), 'Détail métadonnée' (Metadata detail), and 'Télécharger les métadonnées' (Download metadata). Below these buttons is a legend section titled 'Légende' with a 'Single symbol' entry. Further down, there is a section titled 'Liste des cartes utilisant cette couche' (List of maps using this layer) with a link to 'Transboundary water resources of the world'. At the bottom of the sidebar, there is a section titled 'Créer une carte utilisant cette couche' (Create a map using this layer) with a button 'Créer une carte' (Create a map). Below the map, there is an information section with tabs for 'Information', 'Attributs', 'Partager', 'Notes', and 'Commentaires'. The 'Information' tab is active, showing the title 'Transboundary Aquifers of the World (2015)' and a detailed résumé: 'The 2015 Map of Transboundary Aquifers of the World (2015 TBA Map) shows the information presently available on the occurrence and extent of Transboundary Aquifers worldwide. There are now 592 identified transboundary aquifers (including 226 transboundary 'groundwater bodies' as defined in the European Union Water Framework Directive, EU WFD, underlying almost every nation. The map is based on the most recent results of an inventory of many projects of many

How to improve the reporting: tools and materials

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How to improve the reporting: tools and materials

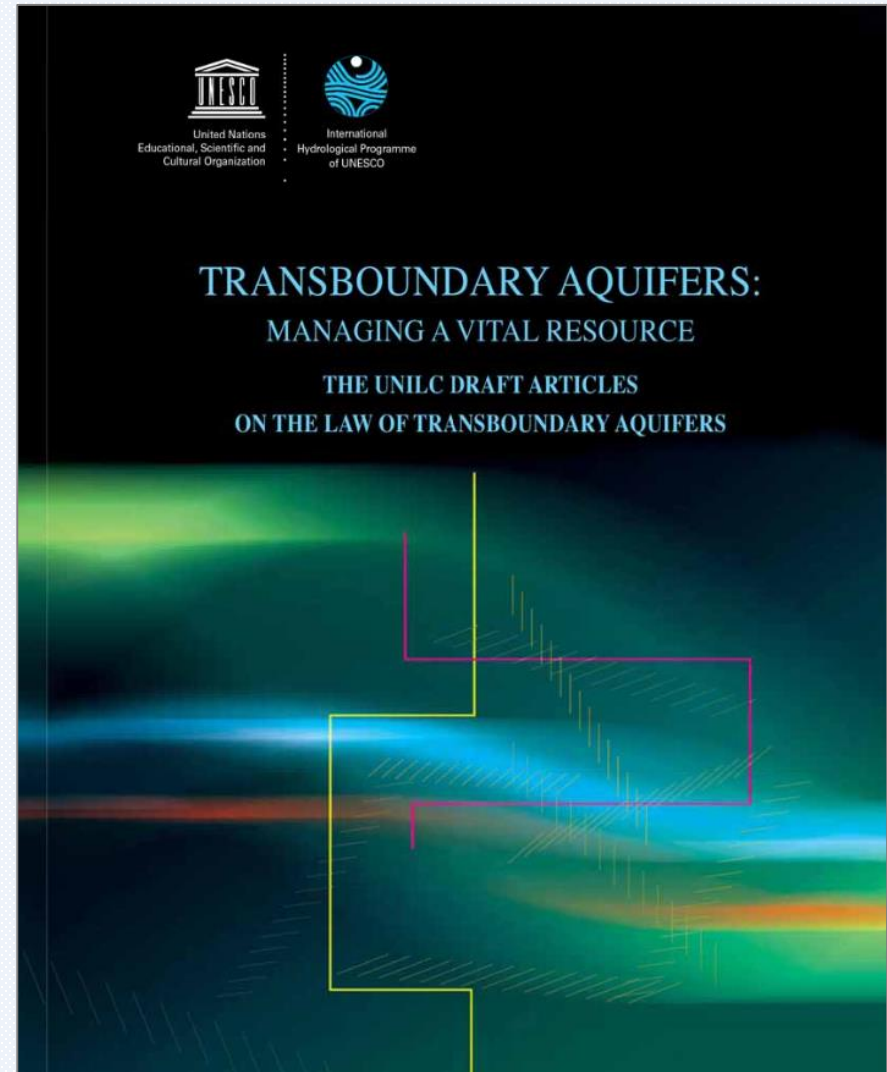
Online data and information about aquifers:

- Delineation
 - Physical characteristics
 - Hydrogeological parameters
 - Georeferenced items
-
- Technical support from the agencies



A/RES/74/193: UNGA Resolution of the Law of transboundary aquifers (2019)

1. *Commends* to the attention of Governments the draft articles on the law of transboundary aquifers annexed to its resolution [68/118](#) as **guidance for bilateral or regional agreements and arrangements for the proper management of transboundary aquifers**;
2. *Encourages* also the International Hydrological Programme of UNESCO to continue its contribution by **providing further scientific and technical assistance** upon the consent of the recipient State and within its mandate;



Thank you for your attention



UNESCO

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