



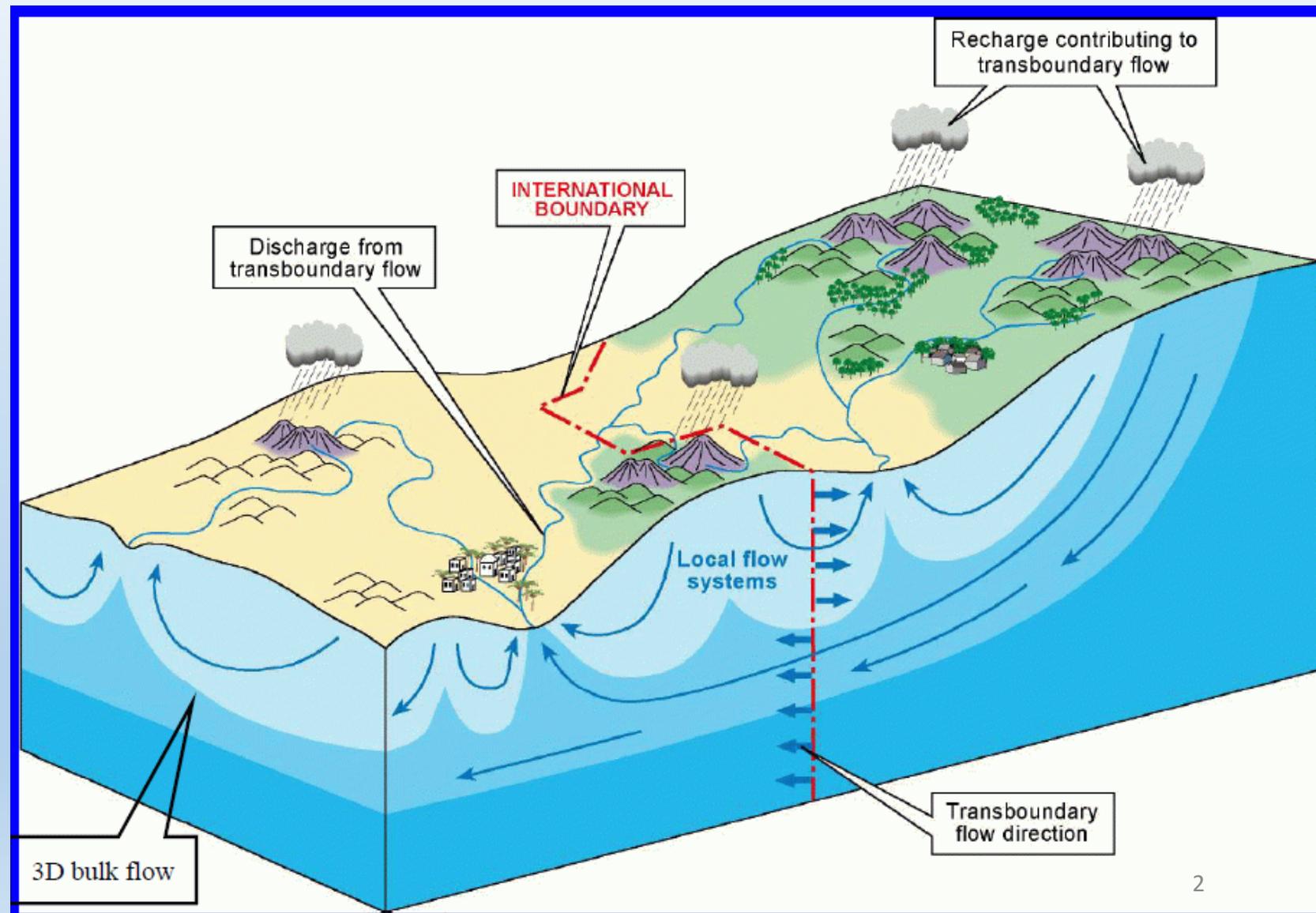
**International Association
of Hydrogeologists**
the World-wide Groundwater Organisation

International cooperation for the management of transboundary aquifers

António Chambel

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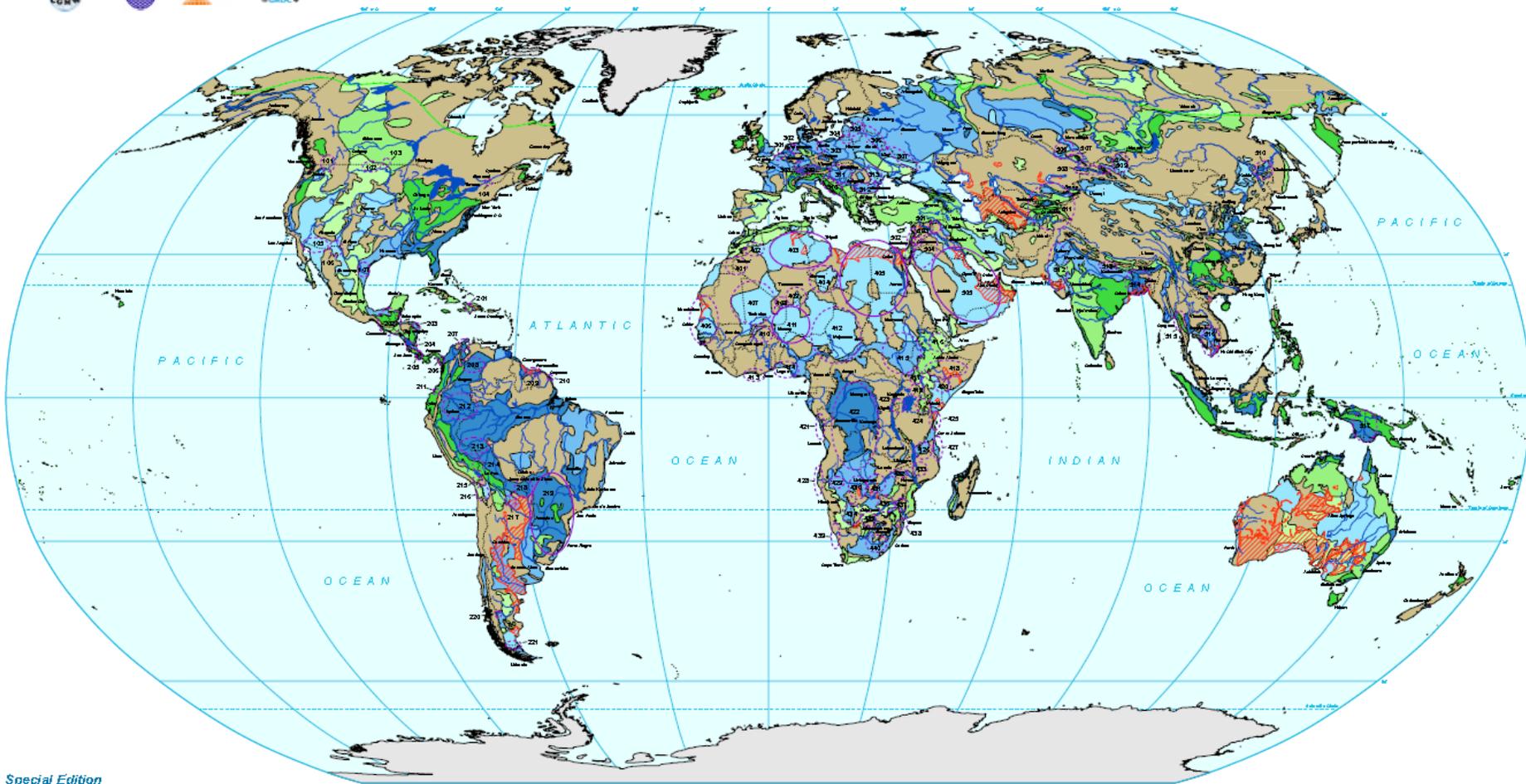
Why to talk about water
management in
transboundary aquifers?





Groundwater Resources of the World

- Transboundary Aquifer Systems -



- Legend**
- Transboundary Aquifer Systems**
- shared/aquifer in progress
 - add local investigation required
 - AVI number of aquifer system (see table 2)
- Groundwater**
- major groundwater basin
 - high groundwater recharge (>150 mm/a)
 - medium groundwater recharge (15-150 mm/a)
 - low groundwater recharge (<15 mm/a)
 - area with complex hydrogeological structure
 - high groundwater recharge (>150 mm/a)
 - medium groundwater recharge (15-150 mm/a)
 - low groundwater recharge (<15 mm/a)
 - area with local and shallow aquifers
 - area of saline groundwater (> 3 g/l TDS)
- Surface water**
- major river
 - large freshwater lake
 - large saltwater lake
 - continuous sea coast
- Geography**
- selected city
 - country boundary
 - boundary of continuous permafrost

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Under the auspices of

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 IAH: Stephen F. Butler and Andrew Steiner

Geographical editing / GIS

BGR: Ute Philipp, Andrea Rohls and Patrick Ochs

Topographic base map

CGMW (UNESCO):
 GTOPO30: Global Map of the World
 1:25000 scale, second edition
 ESI (2005): Data of NASA
 USGS (2000): Global GIS
 modified by BGR (2000)

Map production

Robinson projection, longitude of central meridian 0°,
 spherical WGS84, geographic coordinates

Special Edition
 from 4th World Water Forum,
 Mexico City, March 2006

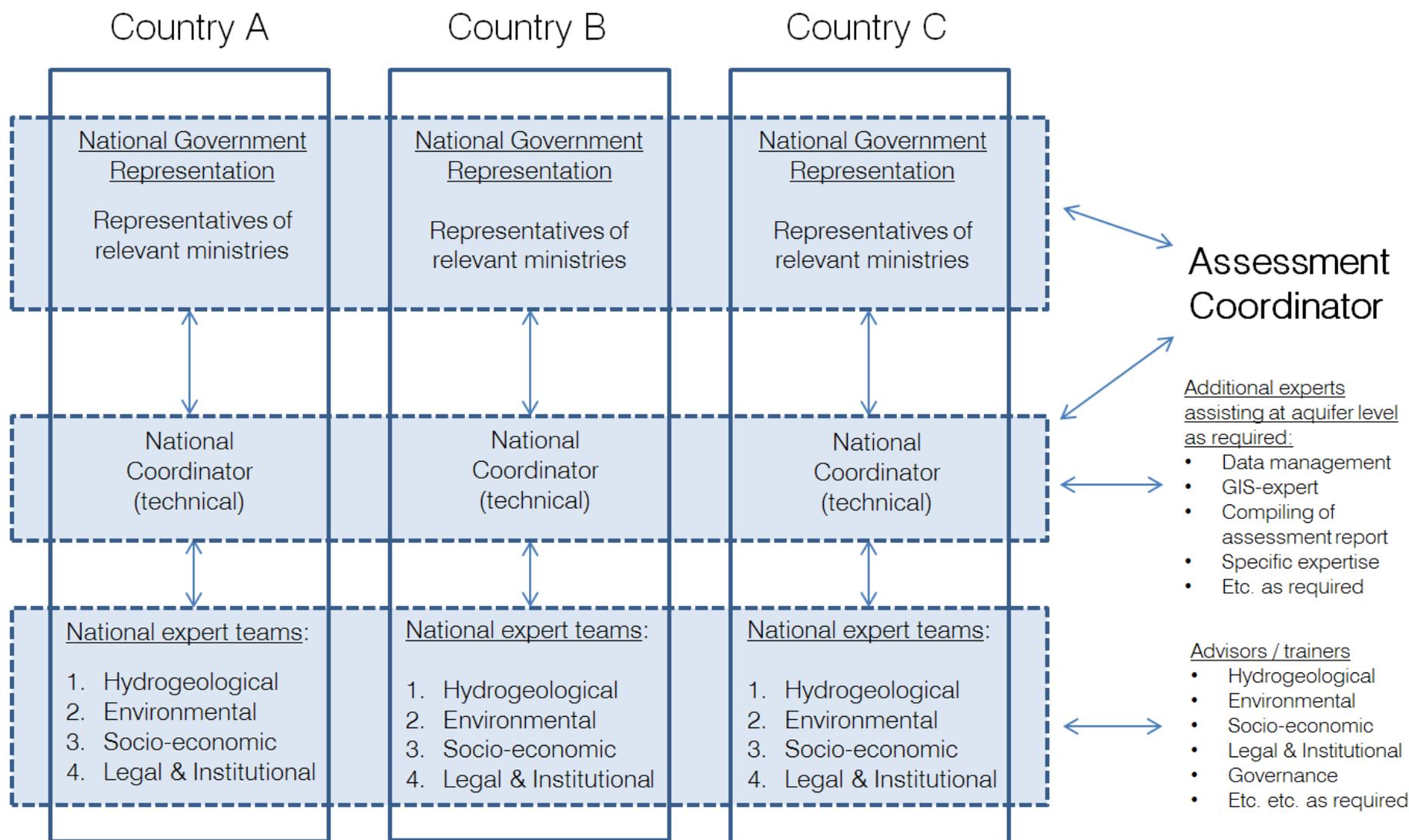
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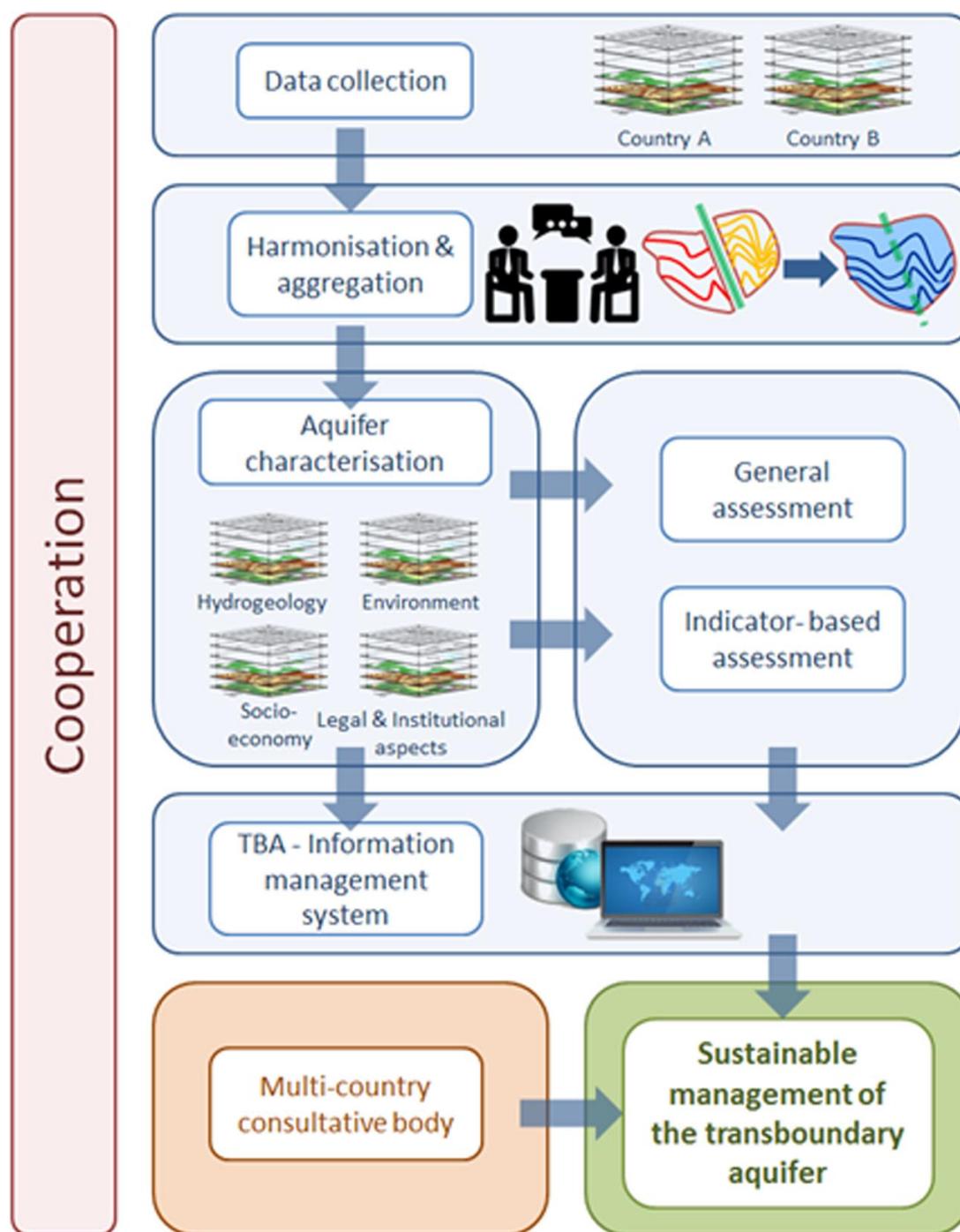
19/10/2018

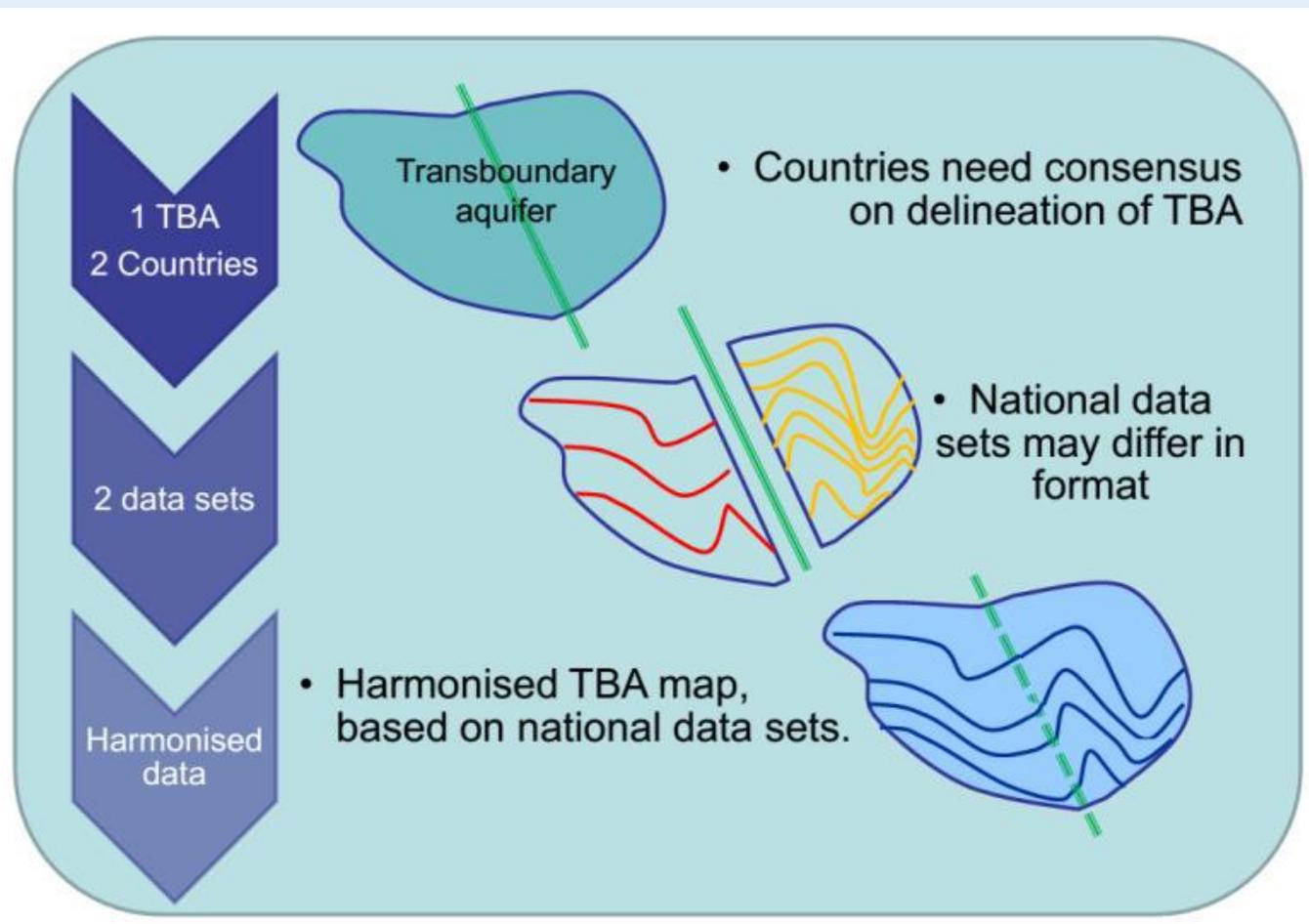
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Elements of data harmonisation:

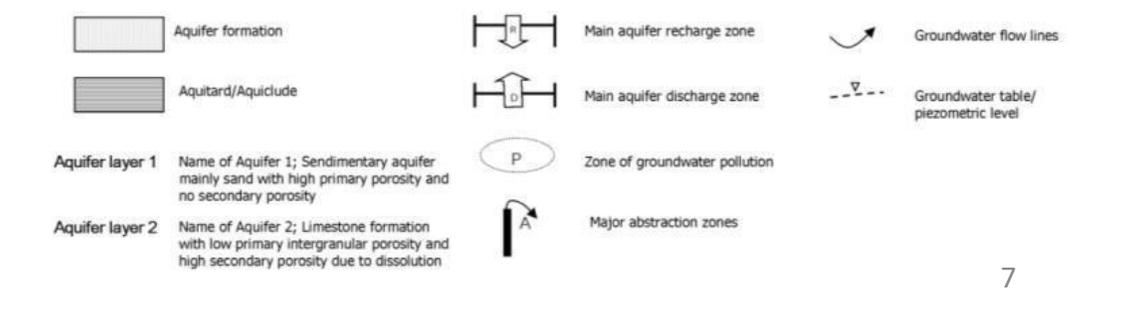
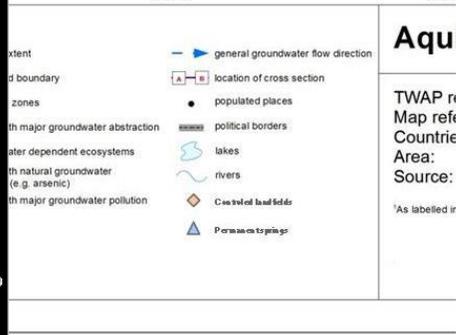
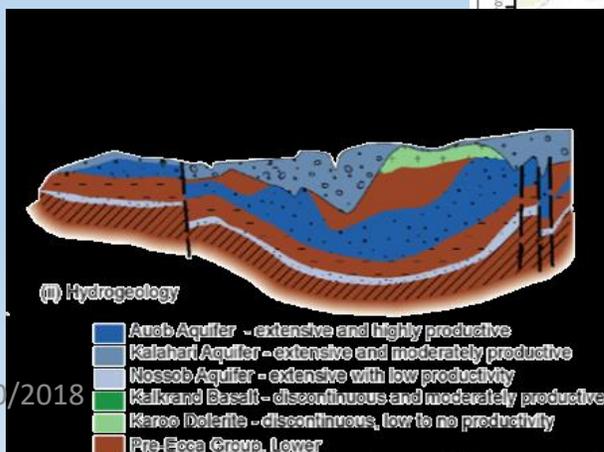
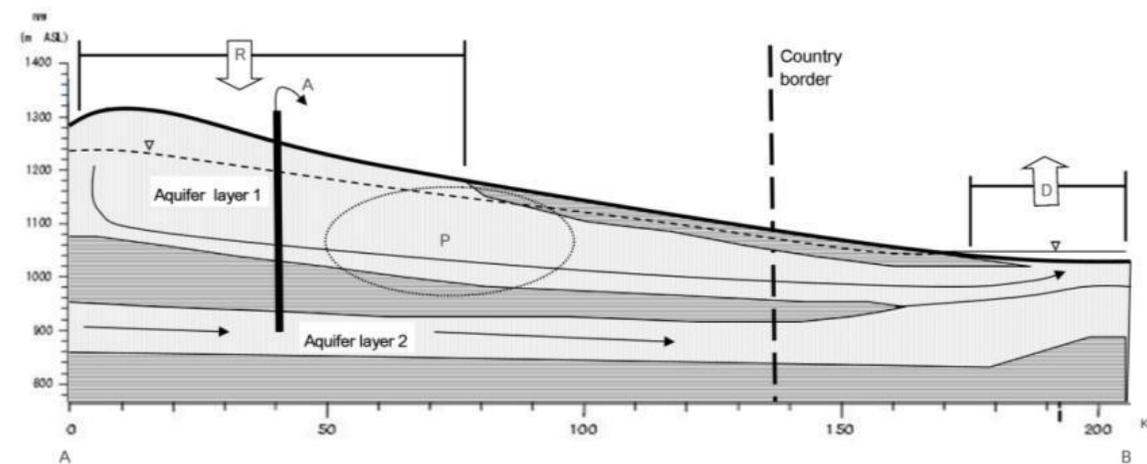
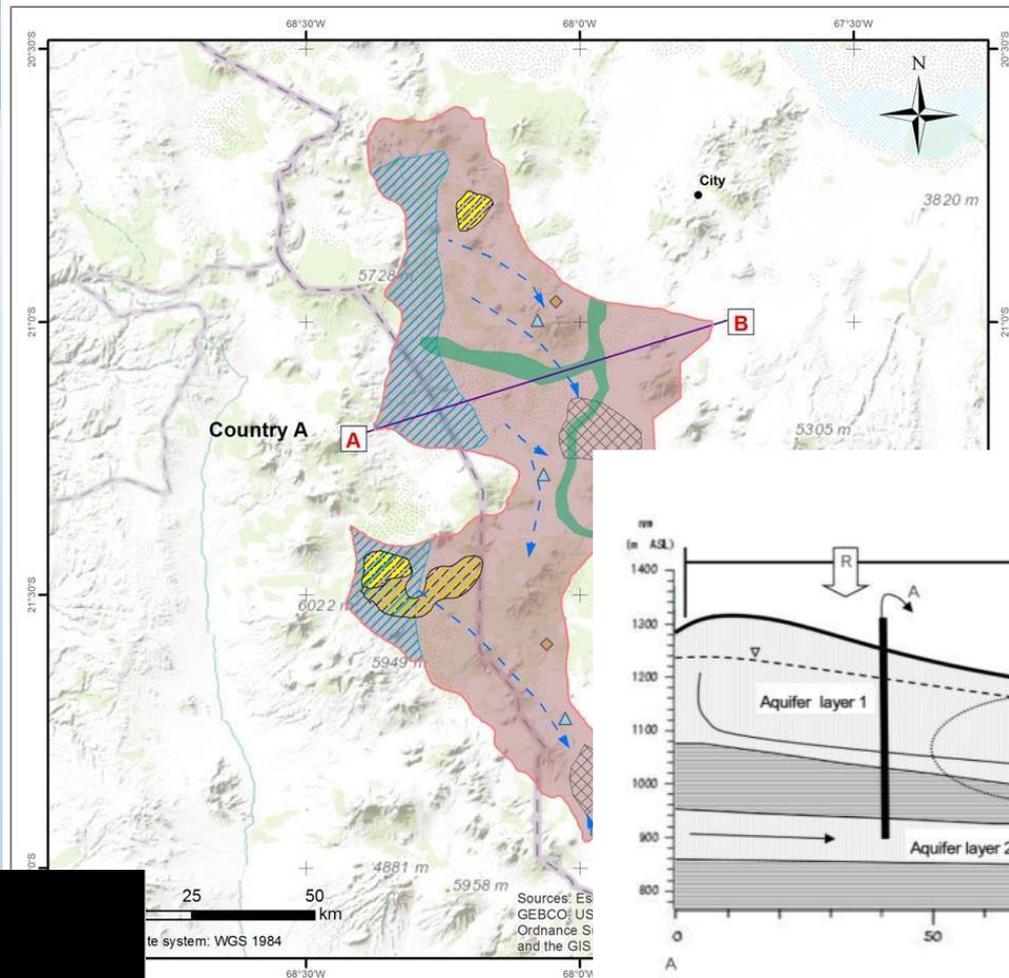
- Aquifer's geometry
- Coordinate system and scale for maps
- Interpolation techniques
- Harmonisation of classifications
- Aquifer's conceptual model

Main outputs at the end of this phase:

- Harmonised set of maps for the aquifer
- Harmonised datasets
- Data needed for the calculation of indicators

Visualisations of the transboundary aquifer

- Thematic maps
- 2D cross sections
- 3D representation of the conceptual model
- Diagrams
- Graphics
- Charts
- Tables



BASE: GUIDELINES FOR MULTIDISCIPLINARY ASSESSMENT OF TRANSBOUNDARY AQUIFERS – IGRAC, UNESCO-IHP

Groundwater Development Stress



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