

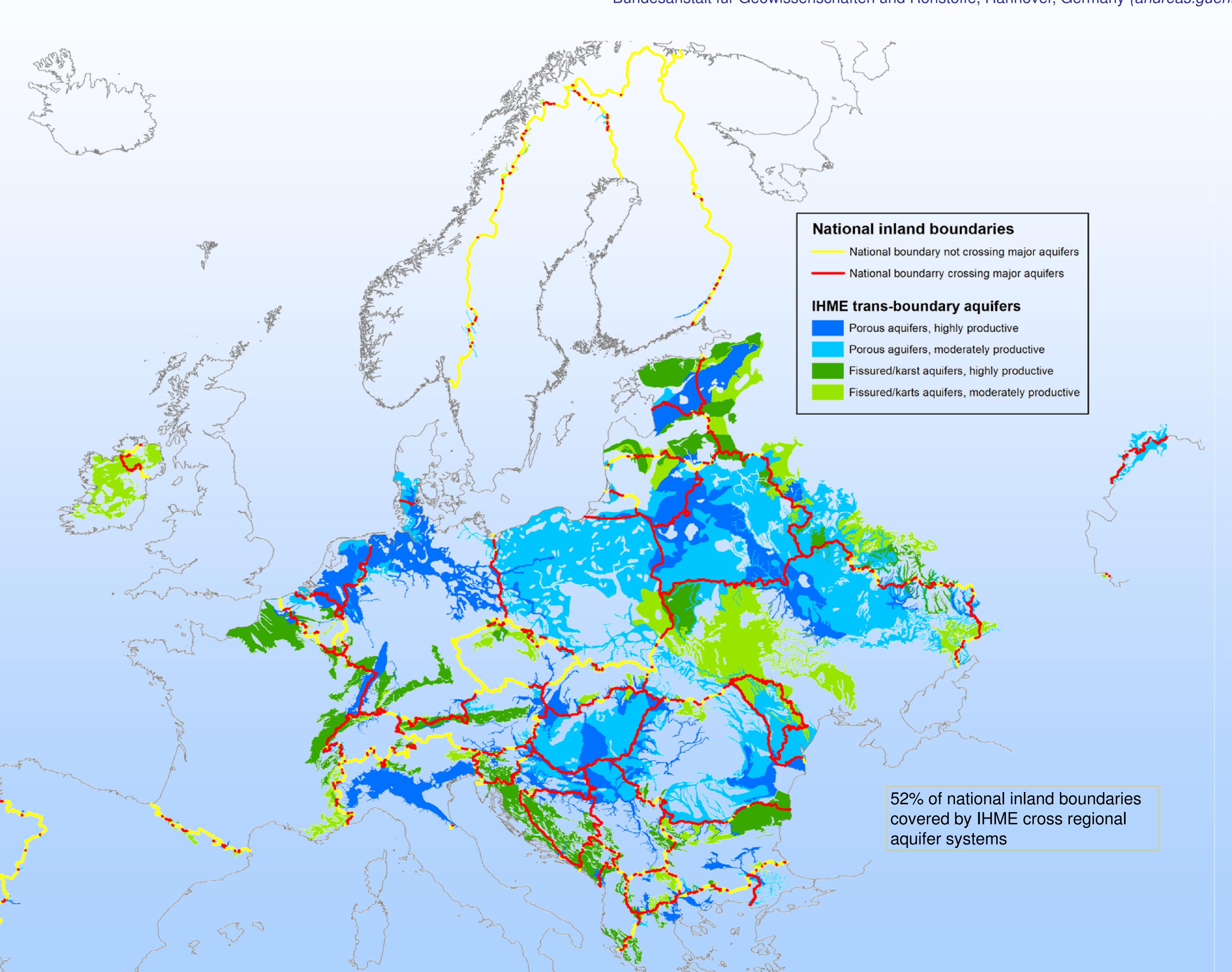




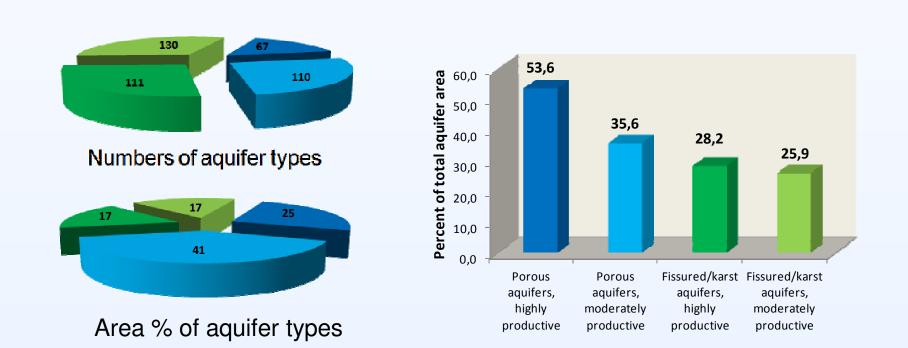
Trans-Boundary Aquifer Systems in Europe deduced from IHME 1500

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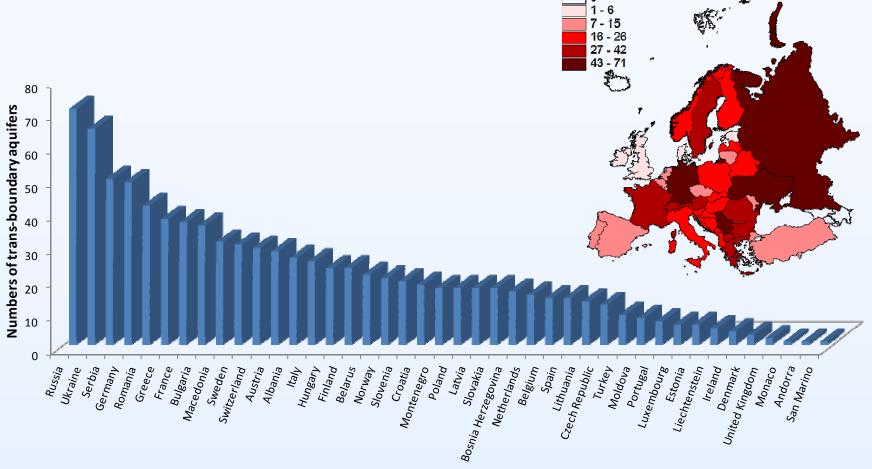
Basic trans-boundary aquifer statistics: Aquifer types



Regional continuous fissured/karst IHME aquifers crossing national inland boundaries are numerous but cover a comparably small bulk TBA area. > 50% of all regional highly productive porous IHME aquifers are crossing national inland borders.

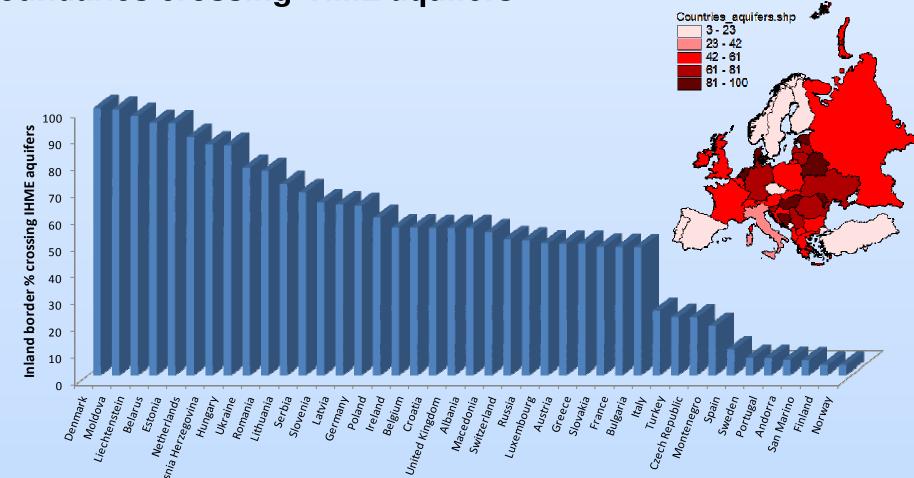
Subdivision of large regional IHME aquifer systems for trans-boundary assessments necessary

Basic country statistics: Numbers of trans-boundary aquifers



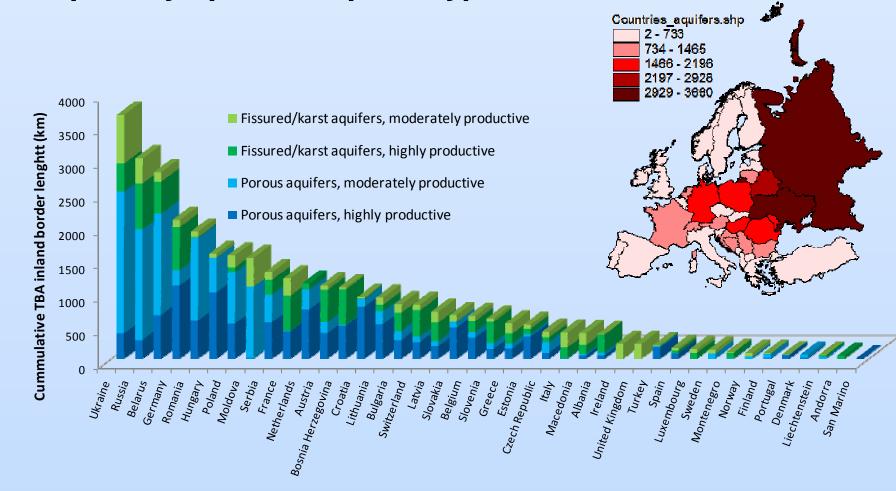
Russia and Ukraine have highest number of trans-boundary aquifers since inland borders crossing complex pan-European groundwater structures. Some inland nations (i.e., Czech Republic) have small numbers, no correlation of land-lock type and numbers of trans-boundary aquifers observable.

Basic border statistics: Percentages of national inland boundaries crossing IHME aquifers



Most European nations have > 50 % of their inland boundaries crossing regional aquifer structures. In the Iberian peninsula and Scandinavia only some small transboundary aquifers are displayed by IHME

Basic border statistics: National inland border lengths occupied by specific aquifer types



Russia, Ukraine and Belarus have longest TBA lengths but mostly cross moderately productive aquifers. In other countries (e. g., Germany, Netherlands), significant border lengths cross highly productive aquifers.

Some observations

- > IHME 1500 can support a synoptic spatial delineation of trans-boundary aquifer systems across Europe and can serve for the identification of priority regions
- For a better geographic assessment, boundary conditions on typology-specific aquifer sizes and border separations have to be formulated
- Additional IHME information (lithology, GW divides, isolines, springs etc.) can allow for a more specific characterization of trans-boundary aquifers
- ➤ More detailed spatial assessment of IHME-derived trans-boundary aquifers can be conducted when aquifer-specific background information on transmissivities and storage coefficients are available
- ➤ A complete assessment of IHME TBA at the given analysis scale would require information on the stress conditions and vulnerabilities of specific aquifers