

Draft UNFC Supplemental Specifications for Groundwater Resources

**Prepared by the Groundwater Resources Working Group of the Expert Group on Resource Management
made available for Public Comments**

Comments by Associate Research Professor in Hydrogeology Kirsti Korkka-Niemi and Senior Scientist Niko Putkinen from Geological Survey of Finland 15.01.2024

Geological Survey of Finland has used UNFC classification for mineral resources already long time and the classification system is known. However, it is somewhat unclear what would be the added value of using UNFC classification for assessing groundwater resources. In previous GeoERA-projects, it has been noticed, that it is almost impossible to describe the natural groundwater resources European wide (RESOURCE) using same criteria and same scale because of the geological heterogeneity. In some countries, there are only tens of groundwater bodies potential for water supply, in some countries such as Finland, thousands of small aquifer. The presence of socially necessary, numerous but usually small projects in groundwater sources that otherwise may not meet ideal E, F, and G-Axis technical constraints for development should be viable based on their social importance.

There is also a question of what to classify. Should we assess the renewable part of the aquifers (which we use in Finland) or fossil water aquifer system widely mined for example in Africa or overuse stage of groundwater resources.

One relevant question is: what groundwater project actually is: single aquifer, regional resource, natural renewable resource, managed resource? If there is a water intake plant, it is rather easy to understand, that project could be the aquifer and it is "Socially Necessary Groundwater Projects". However, when dealing with integrated water resources, surface water groundwater interaction such as bank filtration happens all the time and the extent of interaction is usually hard to assess. In addition, managed aquifer recharge is widely used. Should the potential for MAR taken into account, as well? Examples of groundwater Project classes could be informative.

Moreover, aquifers can have different potential use in future. For water supply, as an energy source, as energy storages or something we do not yet even know. There can be conflicts between possible users (water supply, energy supply, energy storage, land use), as well.