Project MIKAS – Most Important Karst Aquifers' Springs

Spring Survey
Instructions for filling

1) Spring Location and Hydrogeological Information

Spring name		**Dominated aquifer's lithology and stratigraphy**	*limestones, dolostones, chalk, marbles, evaporites, complex lithology*
Country / Region			*karst aquifer age (use Intern. stratigraphic chart)*
Nearest settlement		**Important or unique karst features in the catchment**	*e.g. caves, other springs, swallow holes, gorges, numerous sinkholes, etc.*
River/Hydrogeological basin		**Type of Spring**	*permanent or temporary; gravity or ascending; fresh or thermal; or use some of literature source for classification*
Coordinates	*Use World Geodetic System WGS84 standard – for N, E in degrees, minutes and seconds (check by pinned spring on Google Earth Map)*	**Regime of spring discharge (Q in l/s, min/av/max)**	*discharges according to available data*
Z(altitude)m asl		**Specific characteristics**	*if belongs to Natural reservation area or parks? Is it transboundary aquifer? It has special discharge mechanism (provide a representative hydrograph)?*
Intake structure*	*Tapped or not, if yes type of intake and construction*	***List of annexes and figures** with authorship (to be attached or placed in document after this table). Annexes should include but not be limited on: - Location map (Geographical of a whole country and local topography map); - Extract of Google Earth map with pinned spring; - Sketch geological or hydrogeological map; - Cross-section. Fig. 1 Fig. 2 Fig. 3 Fig. 4 (after …., 2017) Photo 1 … (photo by….) Photo 2 …*	
Amount of used water* and ecological flow*	*Average pumping hours (h/day) and rate (l/s). Average overflow - non-tapped yield as an ecological flow (l/s)*		
Water physical and chemical characteristics	*Average values of Temp (^{0}C); TDS (g/l) or EC (µS/cm); pH ( ) Hardness (^{0}dH)*		
Groundwater protection	*Established sanitary protection zones (yes/no, and if yes explain shortly)*		
Remarks (web pages)	*Information sources, web pages (preferably in English)*		

*/ in case of spring tapped

2) Spring Importance / Criteria

Criterion	Justification / Facts	Criteria order
Historic, H **Aesthetic, A** **Economic, E** **Scientific, S** **Ecological, Ec**	*Provide justification following principal or all of selection criteria.* **H:** *Numerous springs in the world have historic and cultural or spiritual significance for local nations or community development. Many cities were also built nearby large springs. Explain in few words, if applicable.* **A:** *The aesthetic criterion is always problematic. However, something like a waterfall, a huge cliff or a cave behind a spring should commonly be judged as a natural wonder or nice feature acceptable for the list.* **E:** *The economic-management value should primarily consider a spring's use. Spring water can be used for potable water supply, irrigation, or for supplying the local industry. Even if not utilized spring can be still of great importance at regional or national level as representative water point with prospect for utilization.* **S:** *The scientific value may consider specific discharge mechanisms of the springs such as large maximal yield, intermittent flowing, gas bubbling, changing water quality in coastal areas (fresh, brackish and saline) or some other properties that could be*	*List criteria according to their relevancy / importance for spring in question. e.g:* **H** **S** **E** **A** **Ec**

	of scientific interest. **Ec:** *Water of karst springs and ecological flow sustains ecosystems, maintain the baseflow of rivers or fill large reservoirs. Presence of protected and endangered species in already protected area, Ramsar site, or some other properties in interest of the biology, ecology, hydrogeology could also be evaluated.*	
Current status of spring	*Statement if the spring is already recognised by the authorities as a nature reserve and/or deserves protection due to its importance for the nation*	
Final proposal for list MIKAS or NIKAS	***Write your proposal hereto***	

3) References and source

References, which validate spring importance	*Provide not more than 10 main references, which include historical facts, some older references (first appearance in literature), main technical references, which provide insight to the spring and catchment characteristics (geomorphology, hydrology, geology, hydrogeology), popular literature about spring (fairy tales, legends, travelogues, guidebooks…)* *If possible follow this style:* *Jacobsen T., Lloyd S. (1935) Sennacherib's aqueduct in Jerwan. The University of Chicago, Oriental Institute Publ. (Breadost J.H., ed.), vol XXIV, Chicago, 140 p.* *Reade J. (1978) Studies in Assyrian geography, Part 1: Sennacherib and the waters of Ninveh.- Revue D'Assyriologie Orientale, 72:157-175*
Data collected by:	
Assisted by (collaborators):	
Remarks	*Every remark, suggestion, not presented above that may strength proposal and support MIKAS project. Please use additional sheet for explanation, if needed.*

4) Optional data

Grading criteria for proposing the spring	*Optionally, you may grade each of criteria (grades from 1-5; e.g. H = 4; S = 4; E = 3; A = 3; Ec = 3*
Surface of catchment area (km^2)	
Water distribution system*	*If spring is captured and data is available provide technical information about pump, capacity or gravity pipeline, local using – tap, all briefly described.*
Purpose of water used*	*Human consumption, animal watering, irrigation, small industry, water for nature.*
Sort and number of beneficiaries*	*Approx.no of people, livestock (big/small), orchards (type & ha), agriculture land (crop & ha), number of industrial objects connected, energy produced*
Groundwater chemistry	*Low mineralized, brackish, saline, mineral, etc. Dominant and specific ions for spring in question and their content (e.g: Ca, HCO_3, Cl in mg/l). If possible, attach typical analysis.*
Water treatment*	*All processes applied and capacity of water treatment plant (if any)*
Threats to spring water quality	*Main kind of pollutants, (type and distance to sewage discharge points, landfills, pesticides used in area…).*