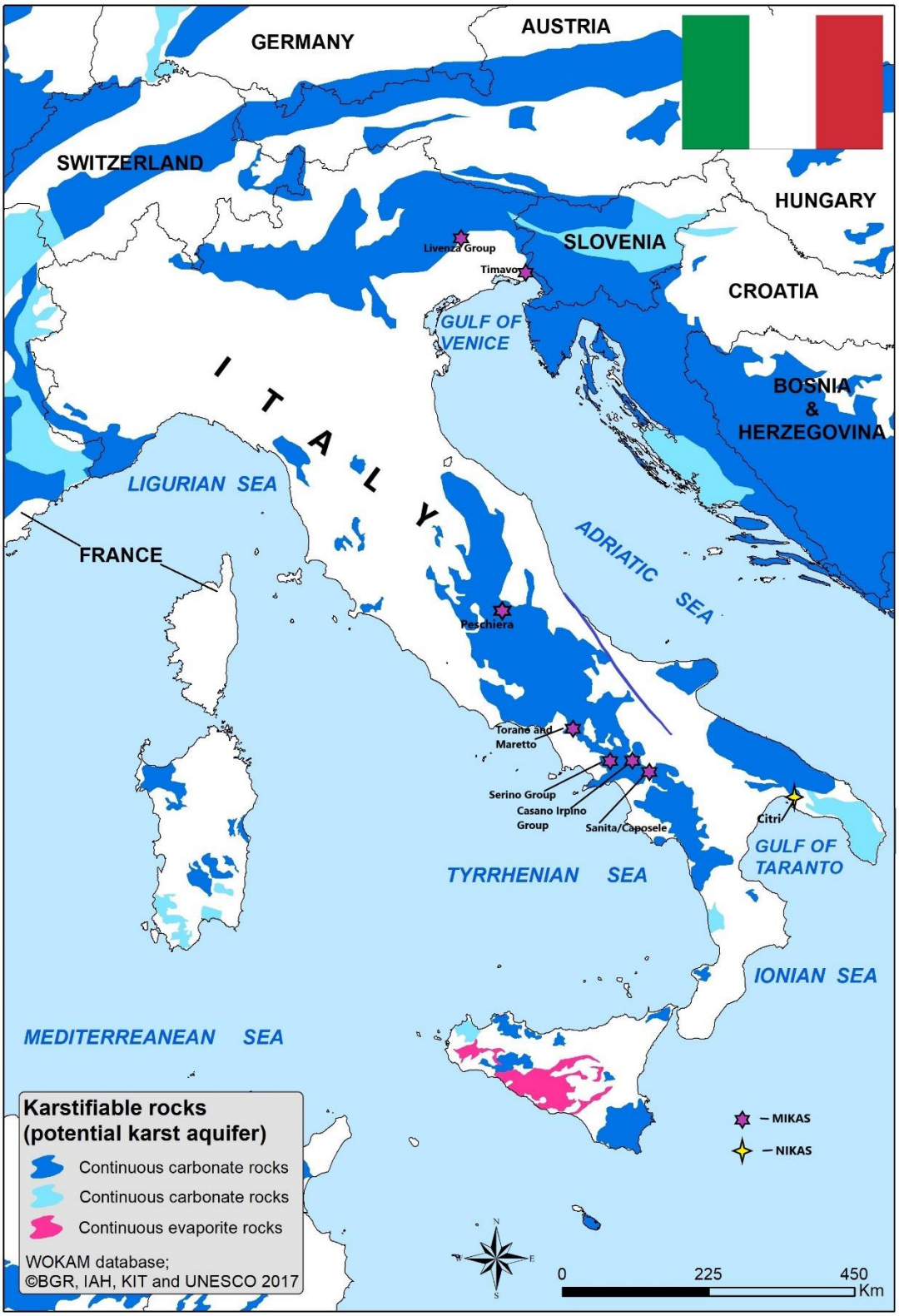
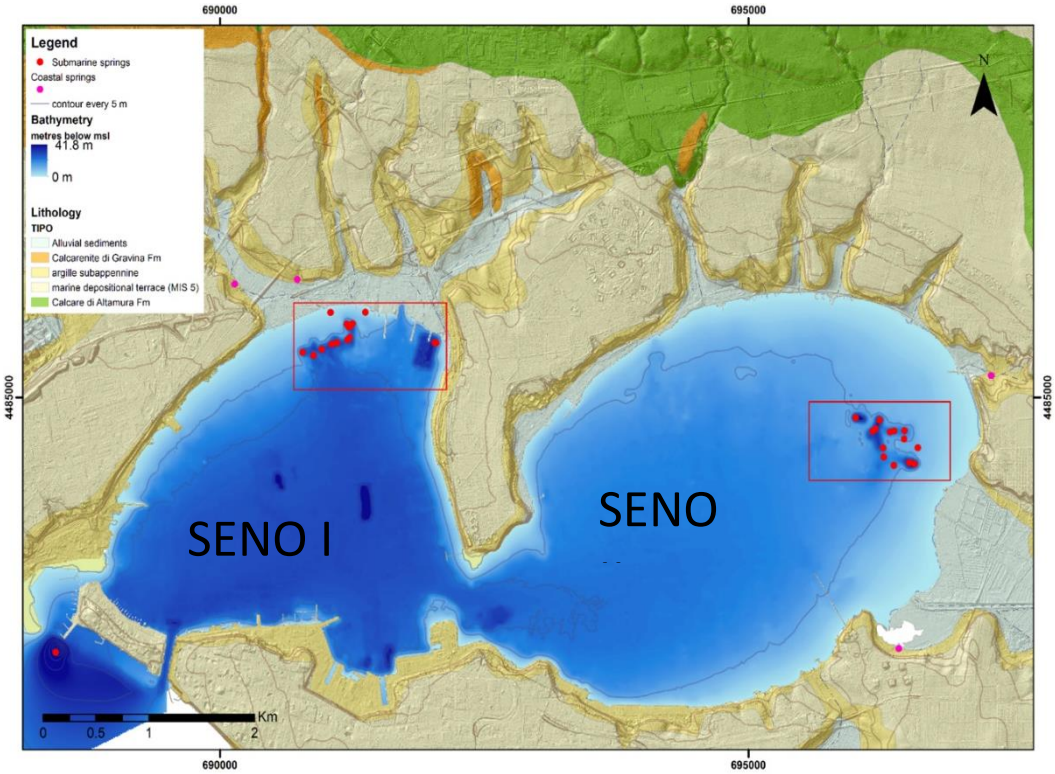

GERMANY
AUSTRIA
SWITZERLAND
HUNGARY
SLOVENIA
CROATIA
Livenza Group
Timavo
GULF OF VENICE
BOSNIA & HERZEGOVINA
I T A L Y
LIGURIAN SEA
ADRIATIC SEA
FRANCE
Peschiera
Torano and Maretto
Serino Group
Casano Irpino Group
Sanita/Caposele
Citri
GULF OF TARANTO
TYRRHENIAN SEA
IONIAN SEA
MEDITERREANEAN SEA
Karstifiable rocks (potential karst aquifer)
Continuous carbonate rocks
Continuous carbonate rocks
Continuous evaporite rocks
WOKAM database;
©BGR, IAH, KIT and UNESCO 2017
MIKAS
NIKAS
N
S
E
0
225
450
Km

Country (NIKAS)	NIKAS springs	Coordinates / Nearby City	Spring discharge (Q in l/s,min/av/max) / tapped or not	Criteria* order / Main justification */ H-historic, A-aesthetic, S-scientific, E-Economic, Ec-ecologic	Data collected by
Italia	1. **Citri** Taranto, Puglia Region	N 40°30'31.13" E 17°10'33.89" Z= -15 to -51 m below sl	- /1000 / - Citro Galeso: Q 600 l/s Citro Citrello: Q 350 l/s Citro Le Copre: Q 80 l/s Not tapped	***Ec, S, E, A, H*** *Clusters of submarine permanent ascending springs in semi-closed marine basins fed by phreatic karst aquifer overlain by clays and calcarenites. Citri are strategic resources for the ecology: The springs provide nutrients, stable temperature (18^{0}C) and oxygen supporting peculiar ecosystems with a great variety of species, including the hippocampus (sea horses), and ensuring their survival during the hot season. Stable geochemistry is useful to growing high-quality molluscs such as mussels and oysters. Citri could be useful for the comprehension of the mechanisms leading to mitigation of climate change effects (rising water temperature, acidification, eutrophication, etc.) on marine water bodies in semi-closed basins near the coast. Further, being the site highly impacted by anthropogenic contamination (due to the industrial area of Taranto city, with presence of one of the most important Italian steel factories). The springs are documented by historical texts dating back to Roman times (Pliny the Elder). Freshwater outflows create peculiar circular shapes, clearly visible at the sea surface, attracting the interest of tourists.*	Mario Parise, Isabella Serena Liso

NIKAS – Citri

Red dots indicate the exact location of Citri springs within the Mar Piccolo di Taranto marine basins. Here 34 submarine springs have been recognized; 20 are in the First Inlet (SENO I) and 14 in the Second Inlet (SENO II). The most important are "Galeso" and "Citrello" in the First Inlet and "Le Copre" in the Second Inlet.





View of karst submarine spring “Citrello”, located in the First Inlet of Mar Piccolo di Taranto.