## IAH network on "Coastal aquifer dynamics and coastal zone management" QUESTIONNAIRE

IAH national committees, IAH members and non members from all around the world involved in SWI and SGD research and management are kindly asked to fill in the questionnaire in this page with as many details as possible.

A world database will be set up and made available, with basic coastal aquifer main characteristics.

22)

Observations:

We expect to gather standard and comparable information on the knowledge level and hopefully the state of the art of the research on SWI and SGD, and coastal aquifer management methods adopted around the world

2) Reported by:    K. YOUDOURIS,D. MANDILARAS and A. ANTONAKOS	1)	Location of aquiter (country, more specific location):	Chersonisos (Crete Island)
### Preatic    Type of aquifer (phreatic or confined)	2)	Reported by:	K. VOUDOURIS,D. MANDILARAS and A. ANTONAKOS
Carbonate aquifer: Limestones, Dolomites and Calcareous dolomites	3)	Type of medium (karst, porous, fracture)	Karst aquifer
Fresh and sailine   Fresh and sailine   Fresh and sailine     Fresh and sailine	4)	Type of aquifer (phreatic or confined)	Phreatic
Lateral from sea   Lateral from sea   Lateral from sea     Aquifer geometry: hydraulic characteristics   Transimissivity 7=1.1-3.6X10 <sup>-3</sup> m <sup>-7</sup> /s     Aquifer parameters: storage - annual water pumping - (in MCMA - millions cubic meters, annually)   The mean annual rainfall in the coastal area is 450 mm; The coefficient of infiltration in carbonate rocks is 52% of the annual rainfall     Depth of aquifer (water level and bottom) - water level 5-30 m - aquifer depth - 50-200 m	5)	Main lithology - (e.g. gravel, sand and clay)	Carbonate aquifer: Limestones, Dolomites and Calcareous dolomites
Aquifer geometry: hydraulic characteristics  7	6)	Hydrochemistry: fresh or saline	Fresh and saline
The mean annual rainfall in the coastal area is 450 mm; MCMA - millions cubic meters, annually)  Depth of aquifer (water level and bottom) - water level 5- 30 m - aquifer depth - 50-200 m  Water level 2-42 m above sea level  Ca²³=69-154 mg/L, Na¹=11-485 mg/L, Mg²¹=12-96 mg/ HCO3218-435 mg/L, JO4220-256 mg/L; The high k- and NO3- concentrations can be attributed to human activities  Major salinity sources:  Seawater is the principal pollutiant and another important source is nitrate pollution (from by fertilizers)  This area is characterized by ongoing urbanization, tourism development and intensive agriculture  Aquifer status: special features - e.g. thermal springs, major faults,  The area is characterized by the presense of faults  Investigation methods - e.g. water level measurements, EC (electrical conductivity profiles), TDEM (geophysical),  Numerical hydrological modeling, chemical and isotopic methods, age determination, IR survey, seepage meters (for Submarine Groundwater Discharge, SGD)  Monitoring methods applied and duration - water level measurements, EC (electrical conductivity profiles - seasonal)  Management methods:  Intensive exploitation, A dam was constructed in Aposelemis river  Reuse of treated waste water for irrigation purpose (olive trees)  Water quality has been deteriorated as a consequence of seawater intrusion and not fully compatible with the uses of this area	7)	Saltwater intrusion: lateral from sea or lakes - upconing	Lateral from sea
MCMA - millions cubic meters, annually)  The coefficient of infiltration in carbonate rocks is 52% of the annual rainfall  Water level 3-42 m above sea level  Water level 2-42 m above sea level  Water level 2-42 m above sea level  Ga²-69-154 mg/L, Na¹-11-485 mg/L, Ng²-12-96 mg/L, Code-2-18-435 mg/L, Na¹-11-485 mg/L, Ng²-12-96 mg/L, The high K- and NO3- concentrations can be attributed to human activities  Major salinity sources:  Seawater is the principal pollutant and another important source is nitrate pollution (from by fertilizers)  Population:  This area is characterized by ongoing urbanization, tourism development and intensive agriculture  Aquifer status: special features - e.g. thermal springs, major faults,  The area is characterized by the presense of faults  Investigation methods - e.g. water level measurements, EC (electrical conductivity profiles), TDEM (geophysical), EC.chemical analyses, temperature and pH  EC.chemical analyses, temperature and pH  Revelle index, Ionic strength, Durov diagram  Revelle index, Ionic strength, Durov diagram  Twelve(12) groundwater samples were collected from the karst aquifer of Chersonisos area (April 2002)  Management methods:  Intensive exploitation, A dam was constructed in Aposelemis river  Aquifer management actions:  Reuse of treated waste water for irrigation purpose (olive trees)  Water quality has been deteriorated as a consequence of seawater intrusion and not fully compatible with the uses of this area	8)	Aquifer geometry: hydraulic characteristics	Transimissivity T=1.1-3.6X10 <sup>-3</sup> m <sup>2</sup> /s
30 m - aquifer depth - 50-200 m  11) Major chemistry (anions - 7; Cations - 7):  Ca³¹=69-154 mg/L, Na¹=11-485 mg/L, Mg²¹=12-96 mg/ HCO3=-218-435 mg/L, SO42=-20-256 mg/L; The high K+ and NO3- concentrations can be attributed to human activities  Seawater is the principal pollutant and another important source is nitrate pollution (from by fertilizers)  13) Population:  This area is characterized by ongoing urbanization, tourism development and intensive agriculture  14) Aquifer status: special features - e.g. thermal springs, major faults,  15) Investigation methods - e.g. water level measurements, EC (electrical conductivity profiles), TDEM (geophysical),  EC, chemical analyses, temperature and pH  EC, chemical analyses, temperature and pH  Revelle index, Ionic strength, Durov diagram  Revelle index, Ionic strength, Durov diagram  Twelve(12) groundwater samples were collected from the karst aquifer of Chersonisos area (April 2002)  Twelve(12) groundwater samples were collected from the karst aquifer of Chersonisos area (April 2002)  Reuse of treated waste water for irrigation purpose (olive trees)  Water quality has been deteriorated as a consequence of seawater intrusion and not fully compatible with the uses of this area	9)		The coefficient of infiltration in carbonate rocks is 52% of the annual
HCO3-=218-435 mg/L, ,SO42-=20-256 mg/L; The high K+ and NO3- concentrations can be attributed to human activities  Seawater is the principal pollutant and another important source is nitrate pollution (from by fertilizers)  This area is characterized by ongoing urbanization, tourism development and intensive agriculture  14) Aquifer status: special features - e.g. thermal springs, major faults,  The area is characterized by the presense of faults  EC, chemical analyses, temperature and pH  EC, chemical analyses, temperature and pH	10)		Water level 2-42 m above sea level
Is nitrate pollution (from by fertilizers)    13	11)	Major chemistry (anions - ?; Cations - ?):	HCO3-=218-435 mg/L, ,SO42-=20-256 mg/L; The high K+ and NO3- concentrations can be attributed to human
development and intensive agriculture  14) Aquifer status: special features - e.g. thermal springs, major faults,  15) Investigation methods - e.g. water level measurements, EC (electrical conductivity profiles), TDEM (geophysical),  16) Numerical hydrological modeling, chemical and isotopic methods, age determination, IR survey, seepage meters (for Submarine Groundwater Discharge, SGD)  17) Monitoring methods applied and duration - water level measurements, EC (electrical conductivity profiles - seasonal)  18) Management methods:  19) Aquifer management actions:  Reuse of treated waste water for irrigation purpose (olive trees)  Water quality has been deteriorated as a consequence of seawater intrusion and not fully compatible with the uses of this area	12)	Major salinity sources:	· · · ·
major faults,  Investigation methods - e.g. water level measurements, EC (electrical conductivity profiles), TDEM (geophysical),  Numerical hydrological modeling, chemical and isotopic methods, age determination, IR survey, seepage meters (for Submarine Groundwater Discharge, SGD)  Monitoring methods applied and duration - water level measurements, EC (electrical conductivity profiles - seasonal)  Management methods:  Intensive exploitation, A dam was constructed in Aposelemis river  Reuse of treated waste water for irrigation purpose (olive trees)  Water quality has been deteriorated as a consequence of seawater intrusion and not fully compatible with the uses of this area	13)	Population:	, , ,
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19) Aquifer management actions:  Reuse of treated waste water for irrigation purpose (olive trees)  Water quality has been deteriorated as a consequence of seawater intrusion and not fully compatible with the uses of this area	17)	measurements, EC (electrical conductivity profiles -	, , , ,
20) Identification of existing or potential problems:  Water quality has been deteriorated as a consequence of seawater intrusion and not fully compatible with the uses of this area	18)	Management methods:	Intensive exploitation, A dam was constructed in Aposelemis river
intrusion and not fully compatible with the uses of this area	19)	Aquifer management actions:	Reuse of treated waste water for irrigation purpose (olive trees)
21) Annexes:	20)	Identification of existing or potential problems:	·
	21)	Annexes:	