

Groundwater Artificial recharge Based on Alternative sources of water: aDvanced INtegrated technologies and managEment

Start date:2005-11-01

End date:2008-10-31

Project Acronym:GABARDINE**Project status:**Completed

Coordinator

Organization name: GEORG-AUGUST-UNIVERSITAET GOETTINGEN	
Contact person	Address
Name: Martin SAUTER	Geoscience Center, Applied Geology, University of Goettingen Gosslersstrasse 5-7
Tel: +49-55-1397910	
Fax: +49-55-1399379	GOETTINGEN DEUTSCHLAND
E-mail: Contact	Region: NIEDERSACHSEN BRAUNSCHWEIG Göttingen
URL:	Organization Type: Education

Description

Objective: Aquifers are the main source of water in most semi-arid areas of the Mediterranean basin. As a result of over-exploitation hydrologic deficits of varying acuity prevail in these areas. Seawater intrusion and pollution have been identified as the primary factors for quality degradation. Further deterioration can be expected based on trends in the precipitation regime attributed to climate change. The objective of this project is to identify alternative sources of water and to investigate the feasibility, both environmental and economic of their utilization. Alternative water sources to be artificially recharged comprise: surface water runoff, treated effluent, and imported water. Furthermore, brackish water bodies, present in many aquifers could be utilised after desalination. The project structured into eight work-packages comprehensively addresses all issues related to the problem: expected precipitation rates, recharge and water budgets, identification of potential alternative water sources and technologies for their utilization, development of tools for the management of groundwater resources under artificial recharge conditions, aquifer vulnerability assessment, characterization of the unsaturated zone, and mixing effects. Four test sites have been selected for practical application of the approach. Substantial field testing, integration of technologies and findings to ensure optimal implementations of aquifer recharge alternatives, quantification of socio-economic impacts and development of dissemination platform are planned. Finally a carefully designed project management shall drive and accompany the project execution in order to ascertain consistency and efficiency.

Achievements:**General information:**

Project Details

Start date:2005-11-01**End date:**2008-10-31**Duration:**36 months**PJ_REF:**518118**Project cost:**3358729 EURO**Project Funding:**2499770 EURO**Programme Acronym:** [FP6-SUSTDEV](#)**Programme type:**Sixth Framework Programme**Subprogramme Area:**Innovative technologies for alternative water sources**Contract type:**Specific Targeted Research Project**URL:****Subject index:**Earth Sciences, Environmental Protection, Innovation, Technology Transfer, Meteorology, Resources of the Sea, Fisheries**Other Indexes:**

Other participants

Organization name: LABORATORIO NACIONAL DE ENGENHARIA CIVIL	
Contact person	Address
Name: João LOBO-FERREIRA	DEPARTAMENTO DE HIDRÁULICA E AMBIENTE (DHA) Avenida do Brasil 101
Tel:	
Fax:	LISBOA PORTUGAL
E-mail:	Region: CONTINENTE LISBOA E VALE DO TEJO Grande Lisboa
URL: http://www.lnec.pt ; http://www.dha.lnec.pt/npe/	Organization Type: Research

Organization name:UNIVERSITAT POLITECNICA DE CATALUNYA

Contact person	Address
Name: Xavier SANCHEZ-VILA	Geotechnical Engineering and Geosciences Jordi Girona 31
Tel:	
Fax:	BARCELONA ESPAÑA
E-mail:	Region: ESTE CATALUÑA Barcelona
URL:	Organization Type: Education

Organization name:TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY.

Contact person	Address
Name: Jacob BEAR	Environmental and Water Resources Engineering Dept. Civil Eng. Technion City
Tel:	
Fax:	HAIFA ISRAEL
E-mail:	Region:
URL:	Organization Type: Education

Organization name:UNIVERSITE DE LIEGE

Contact person	Address
Name: Serge BROUYÈRE	Hydrogeology Group - GEOMAC Department - Faculty of Applied Sciences and Aquapôle ULg Place du 20 Août, 7
Tel:	
Fax:	LIEGE BELGIQUE-BELGIË
E-mail:	Region: RÉGION WALLONNE LIÈGE Liège (Arrondissement)
URL:	Organization Type: Education

Organization name:ARISTOTELIO PANEPISTIMIO THESSALONIKIS

Contact person	Address
Name: Panagiotis MAHERAS	Department of Meteorology and Climatology Administration Building, University Campus
Tel:	
Fax:	THESSALONIKI HELLAS
E-mail:	Region: VOREIA ELLADA KENTRIKI MAKEDONIA Thessaloniki
URL:	Organization Type: Education

Organization name:GEOLOGICAL AND GEOPHYSICAL CONSULTANTS - GEOSERVICE

Contact person	Address
Name: Klithenis DIMITRIADIS	GEOSERVICE Lykaiou Street 35
Tel:	
Fax:	ATHENS HELLAS
E-mail:	Region: ATTIKI
URL:	Organization Type: Other

Organization name:THESSALONIKI WATER SUPPLY AND SEWERAGE COMPANY S.A.

Contact person	Address
Name: Andreas DELIGIANNIS	THESSALONIKI WATER SUPPLY AND SEWERAGE Co S.A Egnatia 127
Tel:	
Fax:	THESSALONIKI HELLAS
E-mail:	Region: VOREIA ELLADA KENTRIKI MAKEDONIA Thessaloniki
URL:	Organization Type: Other

Organization name:THE UNIVERSITY OF NOTTINGHAM

Contact person	Address
----------------	---------

Name: Henry POWER	School of Mechanical, Materials and Manufacturing Engineering, The University of Nottingham University Park
Tel:	
Fax:	NOTTINGHAM UNITED KINGDOM
E-mail:	Region: EAST MIDLANDS DERBYSHIRE, NOTTINGHAMSHIRE Nottinghamshire
URL:	Organization Type: Education

Organization name: PALESTINIAN HYDROLOGY GROUP FOR WATER AND ENVIRONMENTAL RESOURCES DEVELOPMENT	
Contact person	Address
Name: Samar HUSSARY	WATER RESEARCH UNIT Al-Ma'ahed Street 4
Tel:	
Fax:	RAMALLAH WEST BANK AND GAZA STRIP
E-mail:	Region:
URL:	Organization Type: Other

Organization name: PALESTINIAN WATER AUTHORITY	
Contact person	Address
Name: Omar AWAD	WATER RESOURCES DEPARTMENT Jerusalem street 2174 RAMALLAH - WEST BANK WEST BANK AND GAZA STRIP
Tel:	
Fax:	
E-mail:	Region:
URL:	Organization Type: Other

Organization name: ENVIRONMENTAL & WATER RESSOURCES ENGINEERING LTD	
Contact person	Address
Name: Jacob BENSABAT	Null 137 Hanassi Avenue
Tel:	
Fax:	HAIFA ISRAEL
E-mail:	Region:
URL:	Organization Type: Industry

Organization name: ISRAEL WATER COMMISSION	
Contact person	Address
Name: Gabriel WEINBERGER	Hydrological Service of Israel (HSI) Hamasger Street 14 20365 TEL-AVIV ISRAEL
Tel:	
Fax:	
E-mail:	Region:
URL:	Organization Type: Other

Organization name: CENTRUL PENTRU DEZVOLTARE ECONOMICA	
Contact person	Address
Name: Constantin Radu GOGU	Environmental Unit Caderea Bastiliei 33, sector 1
Tel:	
Fax:	BUCHAREST ROMANIA
E-mail:	Region: BUCURESTI Bucuresti
URL:	Organization Type: Other

Record control number:78750