

Action Groups

Search Terms

Filter by Topic

- ☐ Natural Waters
- ☐ Sustainability
- ☐ Water Policy and Administration
- ☐ Water Services and Water Use
- ☐ Water Technology

Filter by Priority Area

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- ☐ Water and wastewater treatment, including recovery of resources
- ☐ Water-energy nexus
- ☐ Flood and drought risk management
- ☐ Ecosystem services
- ☐ Water governance
- ☐ Decision support systems and monitoring
- ☐ Financing for innovation
- ☐ Smart technologies
- ☐ All or several ...



Here, the Marketplace presents the current activities of the 29 EIP Water Action Groups (AGs). To receive up-to-date information or join these groups, please browse the sections below.

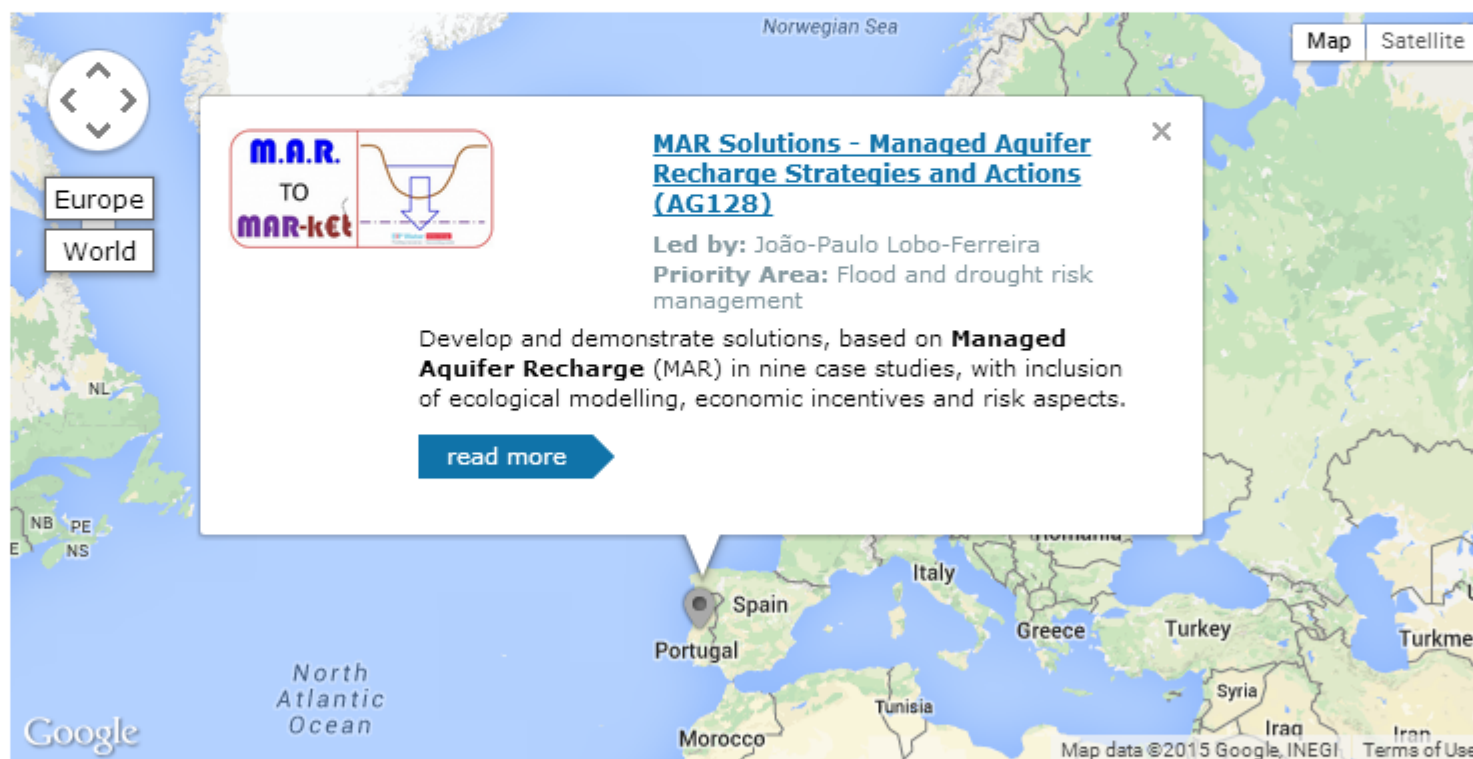
EIP Water's voluntary, multi-stakeholder Action Groups are at...

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Action Groups

list view

map view



Type

- ☒ Event
- ☒ Organisation
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- ☒ Project
- ☒ User
- ☒ Weblog
- ☒ Working Group

Filter by Topic

- ☒ Natural Waters
 - ☐ Coastal Waters
 - ☐ Groundwater
 - ☐ Lakes
 - ☐ Marine Waters
 - ☐ Rain and Precipitation
 - ☐ Rivers
 - ☐ Scarcity, Floods, Droughts (Extreme Events)
 - ☐ Transitional Waters
 - ☐ Wetlands
- ☒ Sustainability
- ☒ Water Policy and Administration
- ☒ Water Services and Water Use
- ☒ Water Technology

Filter by Country

- ☐ Afrika
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- ☐ Asia
- ☐ Europe
 - ☐ Albania
 - ☐ Andorra

Weblog

MARtoMARKET open meeting during the EIP Water conference in Barcelona

Country: Portugal

Objective:

Demonstrating the feasibility and efficiency of MAR in combating future water scarcity threats in the Circum-Mediterranean area.

read more

Weblog

M. Salvetti (WaterReg) @ International Water Regulators' Forum

Country: Portugal

Maria Salvetti (Coordinator of the WaterReg project within the Water Area at the...

read more

M. Salvetti (WaterReg) @ International Water Regulators' Forum

Maria Salvetti (Coordinator of the WaterReg project within the Water Area at the Florence School of Regulation) has been invited to moderate a session on "Progressive models for economic regulation" at the International Water Regulators' Forum on 22 September 2014 in Lisbon, Portugal.

The International Water Regulators' Forum is jointly organised by the International Water Association (IWA) and the Portuguese Water and Waste Services Regulation Authority (ERSAR) and it brings together regulators to discuss the role of regulation, its current status and future trends on water services provision, as well as the different interactions between regulatory bodies, with the aim of contributing to the dissemination of good practices and allowing for a harmonization of regulatory practices.

The International Water Regulators' Forum is part of the IWA World Water Congress & Exhibition 2014, which will be held on 21-26 September in Lisbon, Portugal.



Weblog

Managed Aquifer Recharge - Knowledge basis III

Country: Portugal

TRAGSA contributes a new publication on...

read more

Weblog

Managed Aquifer Recharge - Knowledge basis II

Country: Portugal

Two GABARDINE (Groundwater artificial recharge based on alternative sources of water) project reports are available on Portuguese and Spanish (Catalonia) Case-studies.

read more

Weblog

Managed Aquifer Recharge Sites - Knowledge Basis I

Country: Portugal

Under the related DEMEAU FP7 project an analysis of European MAR sites has been performed and a corresponding report has been published. You may access this publication, prepared by the authors S...

read more

ARTIFICIAL RECHARGE ENHANCEMENT TO PREVENT SEAWATER INTRUSION, KORBA (TUNISIA)

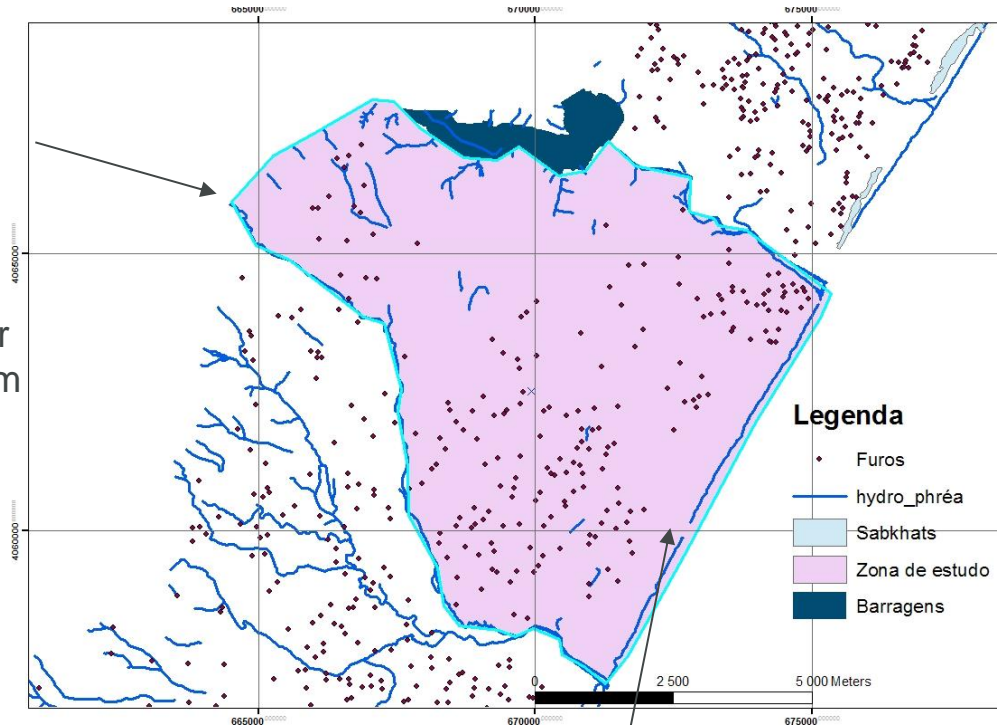
Results and conclusions

Conceptual model; Modflow

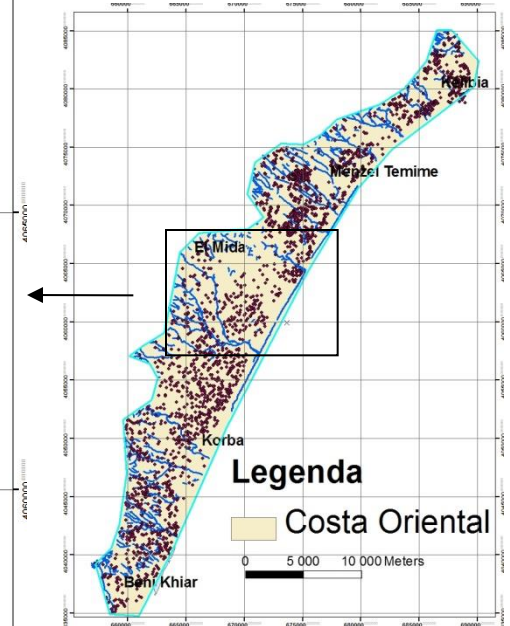
Wells – constant level

Area = 57,3 km²

Average depth for abstraction = 20 m

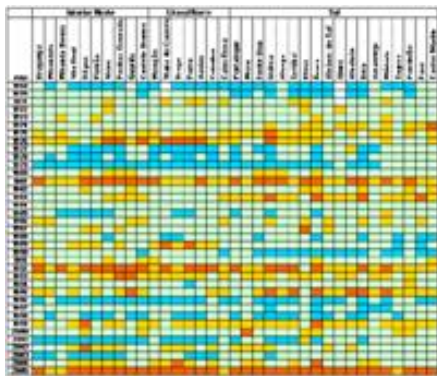


Mediterranean sea – constant level



(Data from I.N.R.G.R.E.F.)

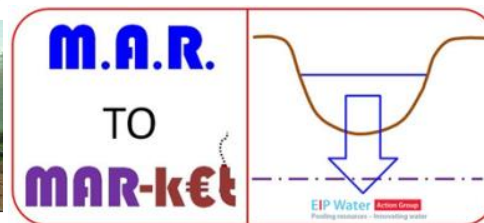
- Existing material: limestone and marl
- Constant hydraulic conductivity = 3 m/d
- Average annual recharge = 56 mm
- Abstractions = 6200 m³/d



Project of the Water Research Institute (LNEC) in the framework of the FP7 INNO-Demo MARSOL project, that started Dec. 1st 2013, is supporting this AG making available 8 demo sites to show the suitability of MAR techniques.



LABORATÓRIO NACIONAL DE ENGENHARIA CIVIL



MANAGED AQUIFER RECHARGE SOLUTIONS

MAR Solutions - Managed Aquifer Recharge Strategies and Actions (EIP WATER AG128)

Dr.-Ing. Habil. J.P. LOBO-FERREIRA, EIP Water AG 128 leader

Laboratório Nacional de Engenharia Civil, LNEC, Portugal

Dr. Enrique ESCALANTE, EIP Water AG 128 co-leader

TRAGSA, Spain

Prof. Christoph SCHÜTH, MARSOL Project leader

TU-Darmstadt, Institut für Angewandte Geowissenschaften, Darmstadt, Germany



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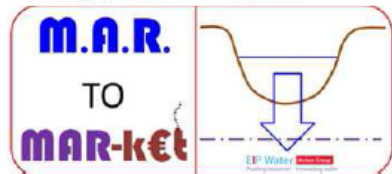


Grupo Tragsa
Garantía Profesional Servicio Público



EIP Water

Boosting opportunities - Innovating water



LABORATÓRIO NACIONAL DE ENGENHARIA CIVIL

INTRODUCTION

Managed Aquifer Recharge technique, or simply MAR, has become, perhaps, the best technique within the Integrated Water Resources Management (IWRM) framework, to palliate Climate Change adverse effects. As some impacts are increasing rapidly in scale and intensity, permanent "technological solutions" are required as a "water innovation in action" line. It is worth mentioning that FP7 INNO-DEMO MARSOL project, that started Dec. 1st 2013, is supporting this AG making available 8 demo sites to show the suitability of MAR techniques.

Involving the principal stakeholders and SMEs in this action group and transferring the results of this action into guidelines/policy will ensure MAR transferability to other locations. This will allow a major social advance (in Europe and worldwide) and can clearly contribute to improving living standards and job creation, as it increases the water availability to important economic sectors, improves human health and well-being, and sustains ecosystem functions and biodiversity.

Perhaps the biggest sector directly affected by MAR technique implementation will be agro-industry. In some Mediterranean countries, farmers are grouped in irrigation communities, what involves individuals, SMEs and even big industries. Their success, most of the times, is affected by water availability, and aquifers are the best way to store water as its capacity overweight traditional damming and decreases water supply transportation costs. Successful experiences are becoming more and more popular and farmers have become a sector who claims for the implementation of new MAR facilities and opportunities, waste water treatment plants and desalination agents, public bodies related to water management at care of the quality, etc. the eco-innovation label might be include in some of their processes thanks to water quality improvements by means of MAR technique.

View Edit Group

EIP Action Groups | EIP Water

EIP MAR Solutions - Managed Aquifer Recharge



www.eip-water.eu/MAR_Solutions

Profile

Members

Documents

News

Events

MAR Solutions - Managed Aquifer Recharge Strategies and Actions (AG128)

Managed Aquifer Recharge technique, or simply MAR, has become, perhaps, the best technique within the Integrated Water Resources Management (IWRM) framework, to palliate Climate Change adverse effects. As some impacts are increasing rapidly in scale and intensity, permanent "technological solutions" are required as a "water innovation in action" line. It is worth mentioning that FP7 INNO-DEMO MARSOL project, that started Dec. 1st 2013, is supporting this AG making available 8 demo sites to show the suitability of MAR techniques.



RECENT NEWS OF THIS GROUP

19th May 2015

MARsolutions participates in workshop on cooperation between Innovation partnerships

19th May 2015

Close cooperation between EIP MARsolutions and FP7 MARSOL Inno-Demo project

27th April 2015

MARenales training workshop aimed at end-users. A pure "MAR to MARk€t" activity.

UPCOMING GROUP EVENTS

26th May 2015

Training for AG participants and Marketplace users

2nd June 2015

Training for AG participants and Marketplace users II

24th June 2015
to 26th June 2015

Water Quality Workshop Algarve Demonstration Site



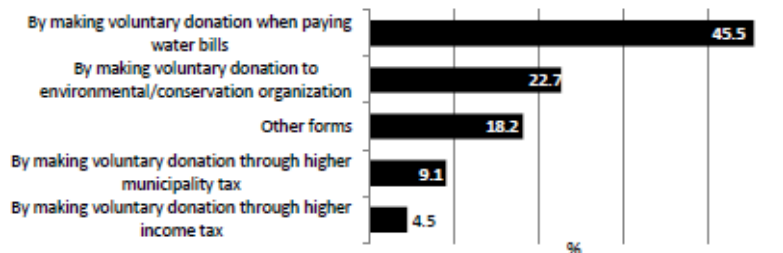
Close cooperation between EIP MARSolutions and FP7 MARSOL Inno-Demo project

The report presents a descriptive analysis of the responses to a survey about protection and preservation of groundwater conducted with a sample of Portuguese farmers of the Algarve region.

This survey was developed in the context of the project MARSOL – Managed Aquifer Recharge Solutions (European Union Seventh Framework Programme For Research, Technological Development and Demonstration – Grant Agreement nr. 619120).

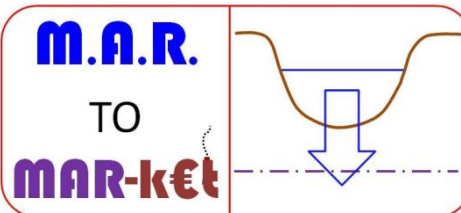
Download the report

Documents:



Regarding the willingness to pay for a groundwater preservation and protection plan the maximum amount allocated by farmers vary between 1€ and 75€ (average of 15€), primarily allocated to their own use of groundwater and to the protection of groundwater-dependent ecosystems. It is important to highlight that a quarter of the respondents are not willing to pay for this plan. The underlying reasons for contributing to the groundwater preservation and protection stress the importance given to improving the quality and quantity of groundwater in the present and in the future, the sustainable use of groundwater and the proper management and preservation of the quality of aquifers.

Develop and demonstrate solutions, based on **Managed Aquifer Recharge (MAR)** in nine case studies, with inclusion of ecological modelling, economic incentives and risk aspects.



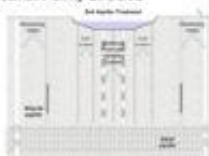
MARSOL: Demonstrating Managed Aquifer Recharge as a Solution to Water Scarcity and Drought

The **Mediterranean region** is suffering from increasing **water scarcity**, which is further exacerbated by climate change, high population density, and high water consumption by agricultural, industrial, and urban uses. Not only quantity but also **quality** is of increasing importance, e.g. due to intensive use of fertilizers and seawater intrusion. Meanwhile, **large water quantities are lost** to the Mediterranean Sea as surface runoff, river discharge, discharge of treated and untreated wastewater, and as discharge of excess water from various sources during periods of low demand. This water can be used in principle for the **controlled (re-)filling of exploited aquifers by artificial infiltration**, referred to as **Managed Aquifer Recharge (MAR)**.

1. Lavrion Technological & Cultural Park, Greece

→ Development and implementation of advanced sensors

- Treated wastewater effluents
- Infiltration basins
- Replenishment of exploited aquifer
- Combating seawater intrusion
- Soil Aquifer Treatment



2. Algarve and Alentejo, Portugal

→ River water infiltration at three sites

- Surface water
- Infiltration basins
- Wells
- Improving the ecological and chemical status of the aquifer



3. Arenales, Castile and Leon, Spain

→ River water infiltration in two catchments

- Surface water
- Treated wastewater effluents
- Infiltration ponds, artificial wetlands, drainage ditches
- Replenishment of exploited aquifer
- Soil Aquifer Treatment



Demonstration Sites

For the project eight demonstration sites have been selected to represent different MAR purposes and hydrological settings.

MARSOL follows an holistic approach, which considers different:

- **Recharge water sources**
- **Recharge techniques**
- **MAR objectives**



8. South Malta Coastal Aquifer, Malta

→ Create a seawater intrusion barrier at a coastal wastewater treatment plant

- Treated municipal sewage effluent
- Injection boreholes
- Combating seawater intrusion



7. Menashe Infiltration Basin, Hadera, Israel

→ Aquifer storage of surplus water from the Hadera desalination plant

- Desalinated water
- Infiltration basin
- Seasonal storage and aquifer storage recovery of surplus desalinated water



6. Serchio River Well Field, Tuscany, Italy

→ River bank infiltration with an advanced monitoring network

- Surface water
- Induced river bank filtration
- Improving groundwater quantity and quality
- Continuous monitoring and automated operations



5. River Brenta Catchment, Vicenza, Italy

→ Agricultural area with a network of ditches

- Surface water
- Forested infiltration area
- Replenishment of exploited aquifer
- Improving the ecological and chemical status of the aquifer



4. Llobregat River, Catalonia, Spain

→ River water infiltration basin

- Surface water
- Infiltration basin
- Replenishment of exploited aquifer
- Improving the ecological and chemical status of the aquifer



The Project

- 21 Partners
- 36 months, starting 12/2013
- Total budget ~ 8.0 million EUR
- EU contribution ~ 5.2 million EUR



MARSOL Project—Main Objectives

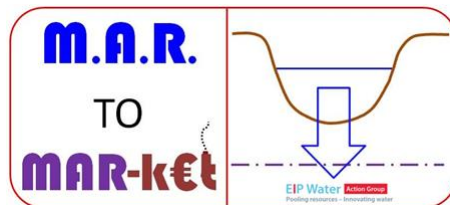
- Demonstrate at 8 field sites that MAR is a sound, safe, and sustainable strategy to increase the availability of freshwater under conditions of water scarcity.
- Improve the state of MAR applications to enable **low-cost, high-efficiency MAR solutions** that will create market opportunities for European Industry and SMEs (**MAR to Market**).
- Promote the advantages of MAR by **tailored training and dissemination programs** to enable and accelerate market penetration.
- Deliver a **key technology to face the challenge of increasing water scarcity** in the Mediterranean region of southern Europe and other regions of the world.

Tools to Reach the Objectives

- Data collection
- Monitoring (improvement of sensors, new sensors)
- Improvement of MAR devices (planning, design, and maintenance)
- Modelling (to simulate the impact of MAR on aquifer hydrology and hydrogeochemistry)
- Scenario analysis
- Development of a **Decision Support System**
- Definition of **guidelines and policies**
- Increase of public participation within **Public Private Partnership (PPP)** schemes
- Market analysis on the potential market exploitation solutions



Participants of the MARSOL kick-off meeting in Darmstadt, Germany, January 2014



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■ **TUE 4th November, time 16:00-18:00. MARToMARKet EIP Water Action Group OPEN MEETING**

Objective: Demonstrating the feasibility and efficiency of MAR in combating future water scarcity threats in the Circum-Mediterranean area.

Tentative Agenda:

- Introduction and objectives of MARToMARKet Action Group 128, by J.P. Lobo Ferreira (Leader of AG 128, LNEC, Portugal) / Nikolaus Fleischmann (EIP Water Secretariat)
- A Knowledge Basis on Managed Aquifer Recharge Sites in Europe, by Christoph Sprenger (KWB, Germany)
- Developments of FP7 INNO DEMO MARSOL project & Executive summary / conclusions of MAR Modelling Workshop in Lisbon, July 2014, by Annette Wefer-Roehl / Karl-Ernst Roehl (MARSOL Project Coordination, TUD, Germany) and J.P. Lobo Ferreira (WP 12 Modelling leader, LNEC, Portugal)
- Executive summary / conclusions of Geofluid MAR Workshop in Piacenza, Italy, by Giancarlo Gusmaroli (LIFE AQUOR PROJECT Technical-Scientific Coordinator, Studio Ecoingegno, Italy)
- Executive summary / conclusions of MAR4FARM Workshop in Arenales and Santiuste, Spain by Enrique Escalante (TRAGSA, Spain).
- MAR activities in Italy, and the importance of MAR for Italian stakeholders, by Vincenzo Marsala (SGI Studio Galli Ingegneria S.p.A., Italy)
- MtoM business and project opportunities in Eastern Europe countries (Ciprian Nanu, MATES nZEB Project, Romania)
- Discussion & networking coffee with representatives of UPC and AgBar, Barcelona (Xavier Sanchez Vila, UPC, Spain).

If you are interested to join, please contact: lferreira@lnec.pt or nikolaus.fleischmann@fresh-thoughts.eu.

MANAGEMENT OF AGRICULTURE LAND USE BASED ON GROUNDWATER SUSTAINABILITY SCENARIOS A Case-Study in Portugal



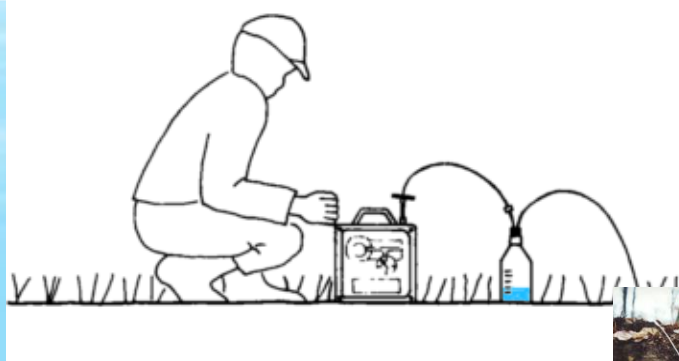
Framework

Objectives

Tasks

Development

Results



Runoff



FCT Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

Vadose zone

www.asemwaternet.org



MANAGEMENT OF AGRICULTURE LAND USE BASED ON GROUNDWATER SUSTAINABILITY SCENARIOS A Case-Study in Portugal

Framework

Objectives

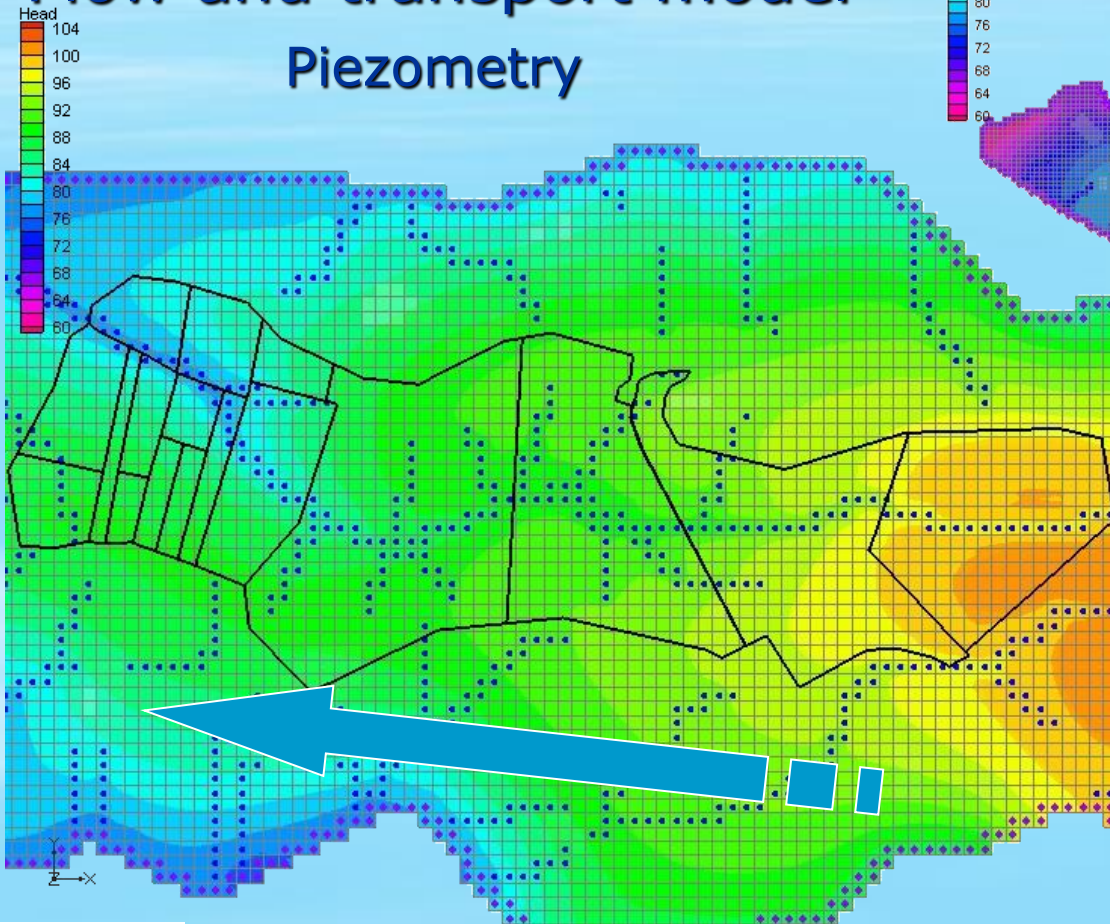
Tasks

Development

Results

Flow and transport model

Piezometry



Regional model
18,6 km²

3 layers, 67 row e
192 column
50 x 50 m mesh

FCT Fundação para a Ciência e a Tecnologia
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MANAGEMENT OF AGRICULTURE LAND USE BASED ON GROUNDWATER SUSTAINABILITY SCENARIOS A Case-Study in Portugal



Framework

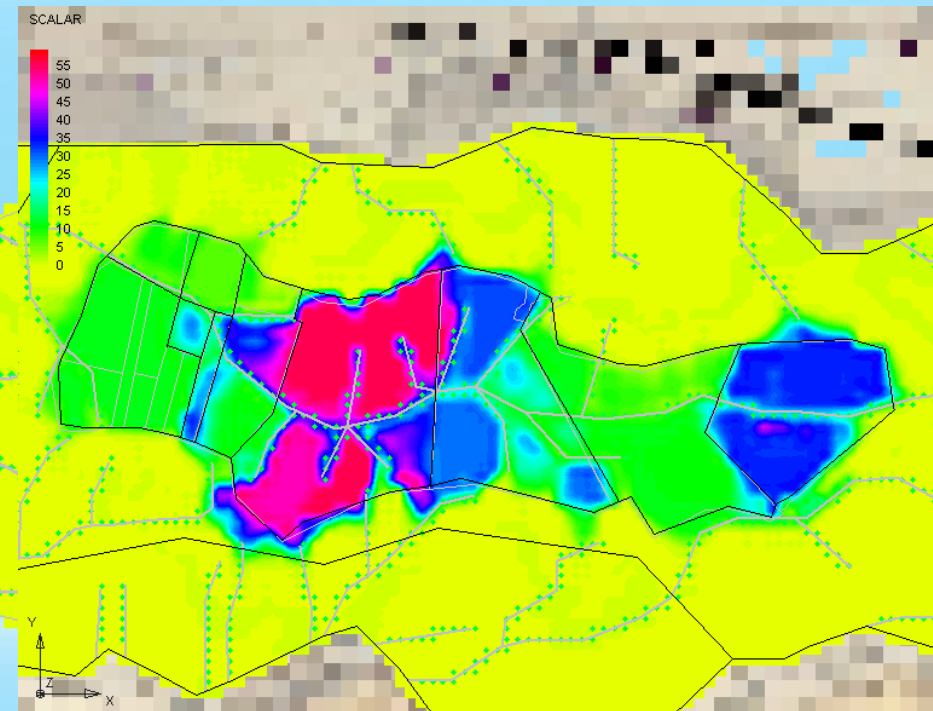
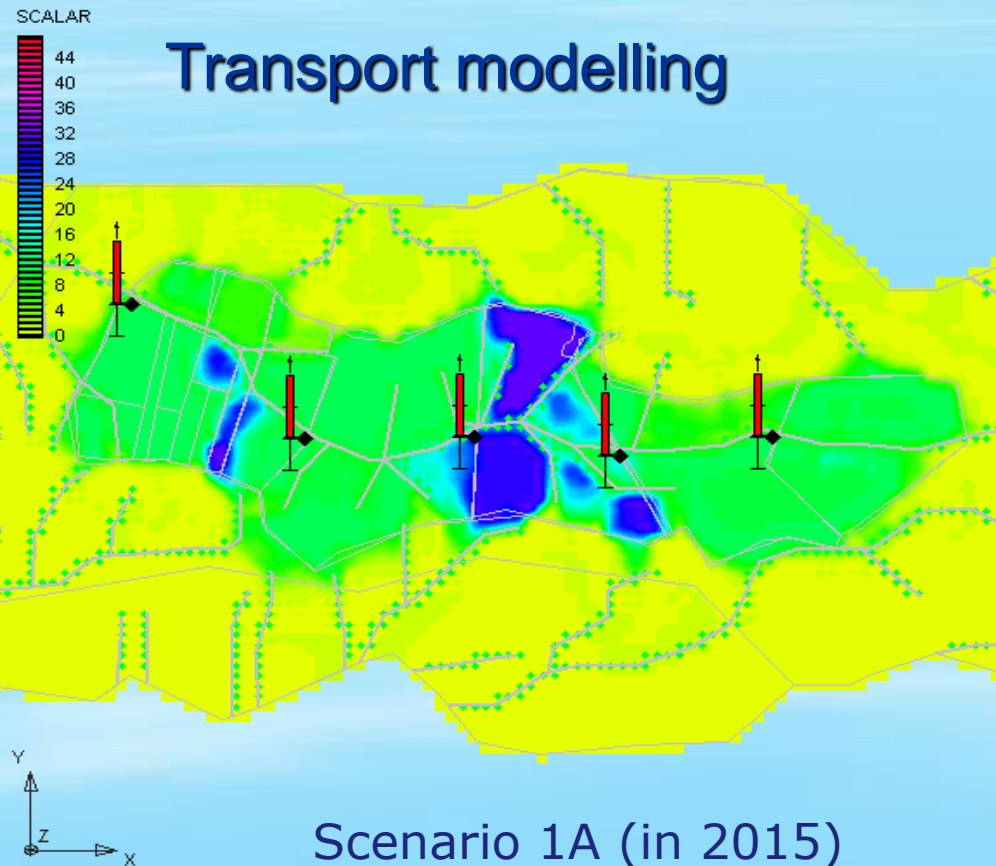
Objectives

Tasks

Development

Results

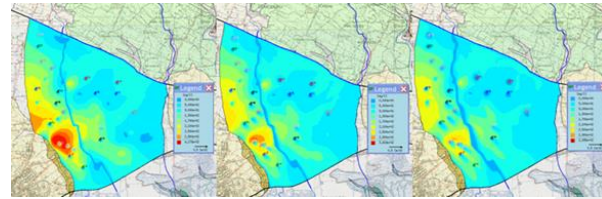
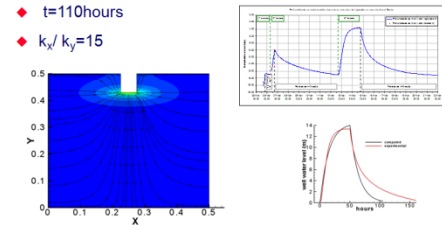
Transport modelling



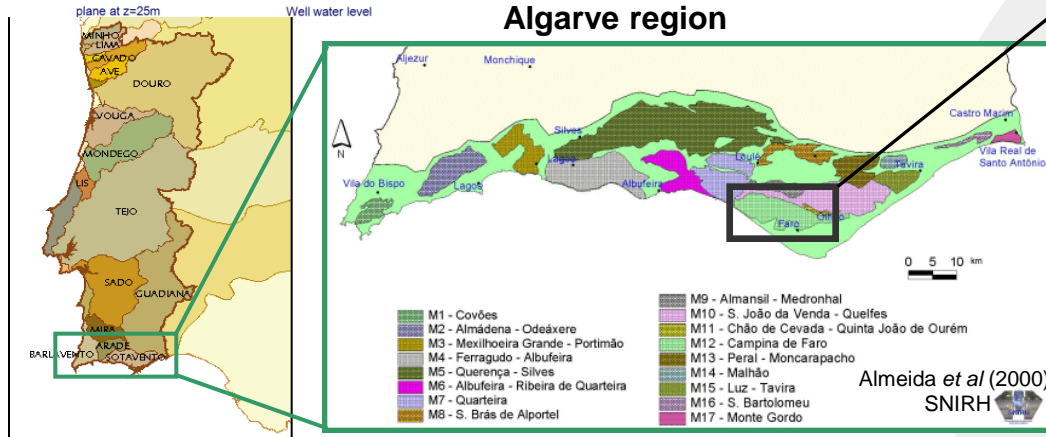
ARTIFICIAL AQUIFER RECHARGE EXPERIMENTS IN THE PORTUGUESE CAMPINA DE FARO CASE-STUDY AREA, DEVELOPED IN THE FRAMEWORK OF GABARDINE PROJECT

- Flow and transport groundwater modeling for different artificial recharge scenarios in Campina de Faro

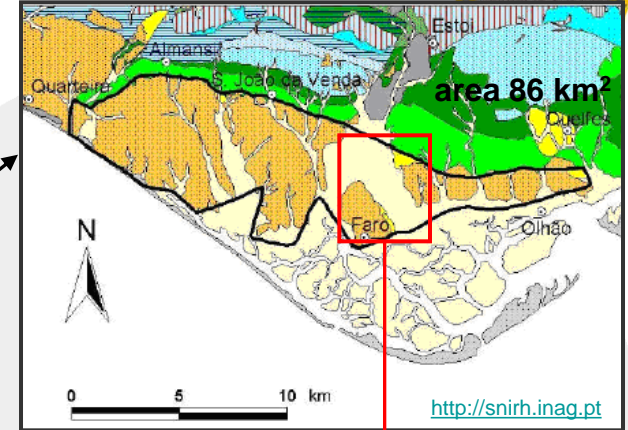
Portuguese Infiltration well



Algarve region

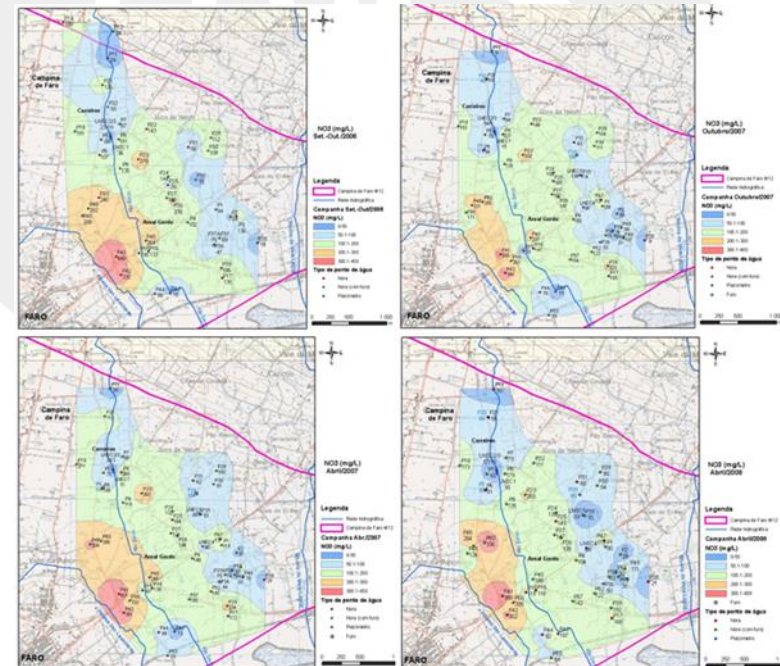
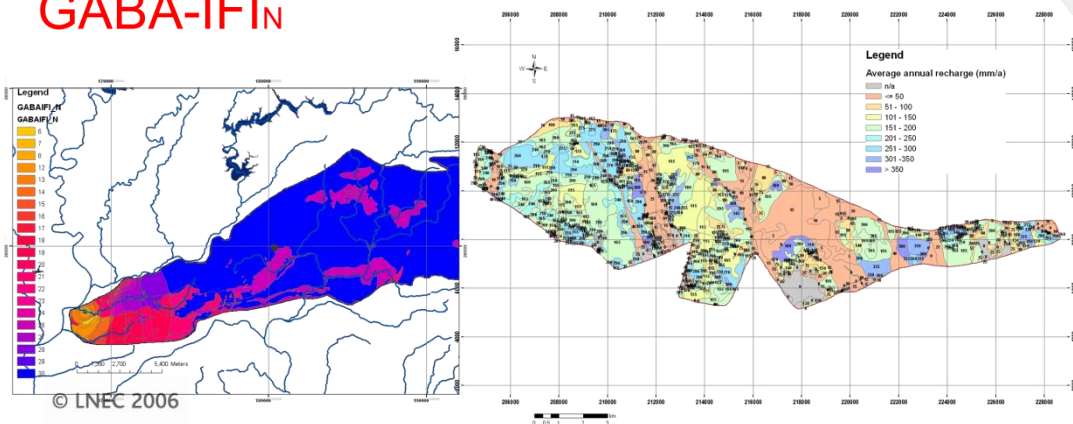


Aquifer system of Campina de Faro



GABA-IFI_N

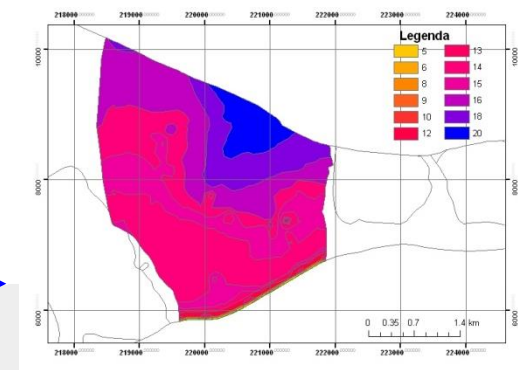
Aquifer recharge



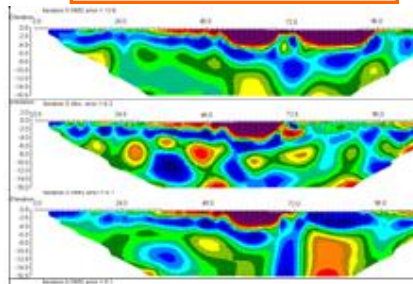
Main Results/Conclusions

- Methodology to identify preliminary candidate areas to implement artificial recharge (GABA-IFI Index)

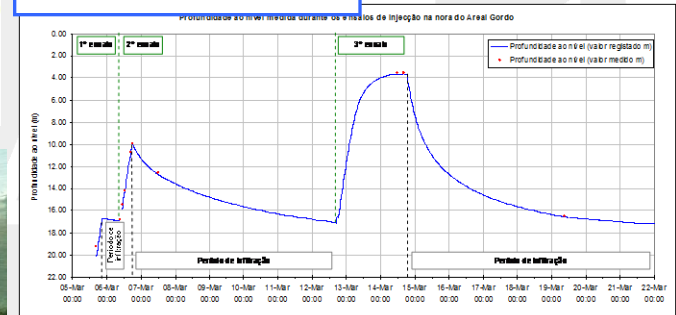
- Artificial recharge infiltration and tracer tests in Campina de Faro



1) Areal Gordo test site 3 Infiltration basins



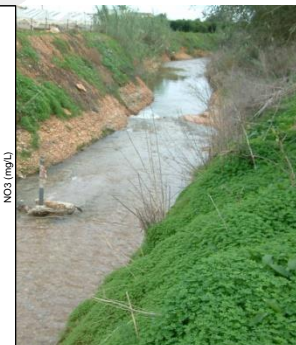
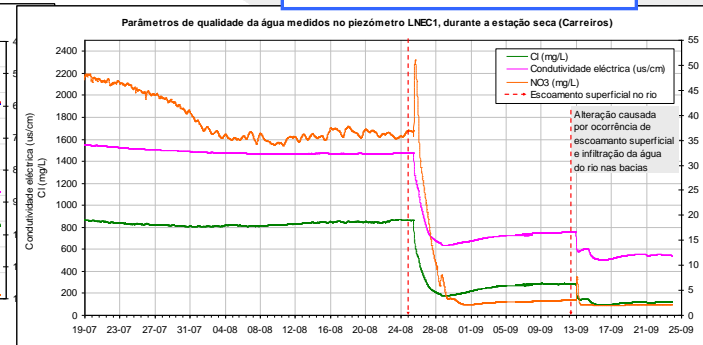
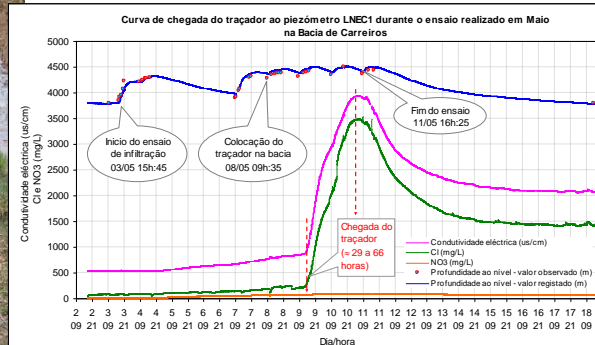
2A) Areal Gordo test site Injection tests in large diameter well "nora"



3) Carreiros test site 2 Infiltration basins in the river bed



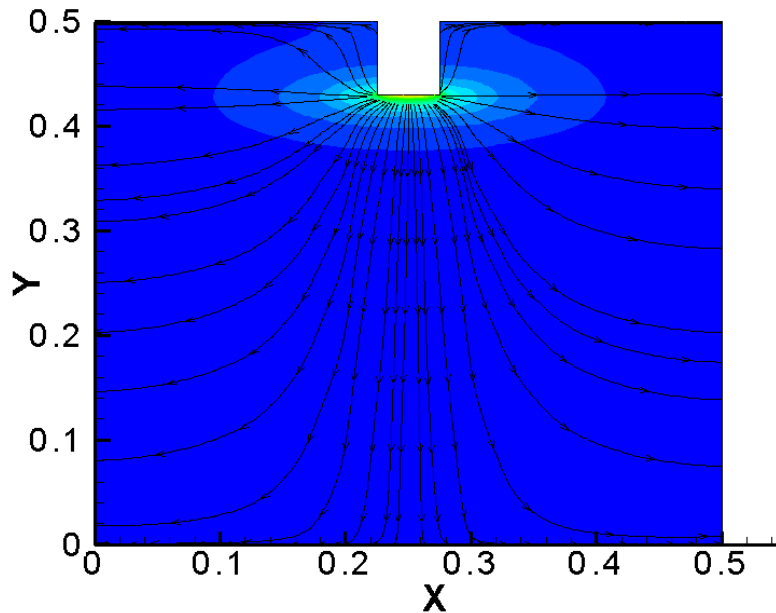
2B) Areal Gordo test site Injection test in medium diameter well



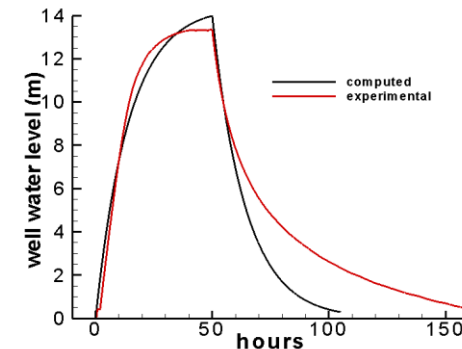
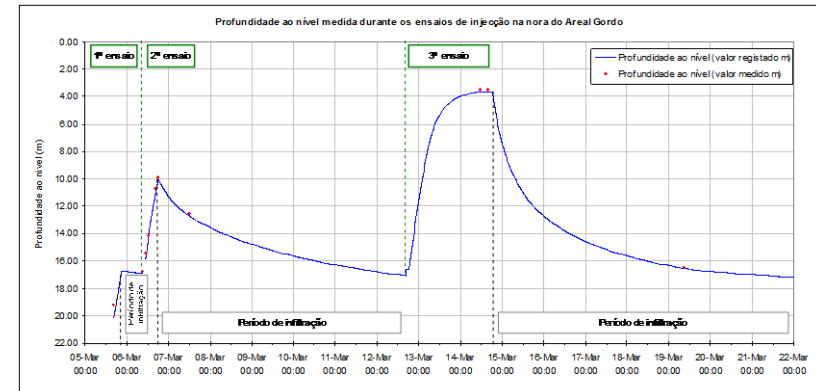
Portuguese Infiltration well

♦ $t=110\text{hours}$

♦ $k_x/k_y=15$



plane at $z=25\text{m}$



Well water level



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL

***João Paulo Lobo Ferreira (lferreira@lnec.pt)

Task 1d: River basin management

Task leader: LNEC; Involved partners

EU: ISPRA, DTU, EWA

Task 1e: Water for energy

Task leader: LNEC; Involved partners

EU: DTU, EWA, EDP/Labelec



Task 1d: River basin management

Task leader: LNEC; Involved partners EU:
ISPRA, DTU, EWA



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL

Innovative groundwater artificial recharge techniques and experiments. Schemes to solve WR problems in EU and China semi arid regions****



***João Paulo Lobo Ferreira (lferreira@lnec.pt)



*<http://www.marsol.eu>

Task 1a: Agricultural Water Management
Task leader: ISPRA; Involved partners EU:
LNEC, DTU, EWA

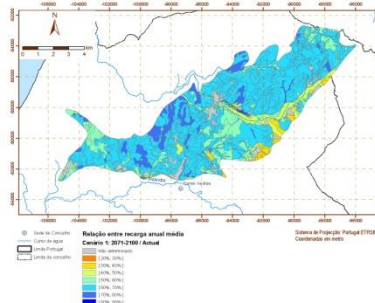
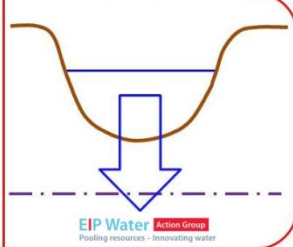


In the scope of LNEC investigations on diffuse pollution prevention and monitoring, the main goals have been to:

- Implement the measures necessary to prevent or limit the input of pollutants into groundwater and to prevent the deterioration of the status of all bodies of groundwater
- Contribute to support future decisions in terms of more adequate policies regarding rural land use planning (type of crops and associated fertilizers and treatment techniques), taking into consideration the protection of the environment based on vulnerability and risk concepts and a sustainable and integrated water management.



M.A.R.
TO
MAR-k€t



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL



ACTIVITIES TO BE ADDRESSED

1. Activity 1 KNOWLEDGE BASE OF EXISTING MAR FIELD APPLICATIONS: Development of MAR knowledge-base of existing field applications for addressing different societal challenges related to water availability.

2. Activity 2. MAR to MAR-ket: Permanent demonstration activity to show industry that they can rely on hydrogeology techniques by involving nine different industrial branches as demo cases. Industry will realise the benefits and will feel more identified with the activities developed in MARSOL project and the expertise from other previous EU founded projects. Provide technical solution for their water supply guarantee and the feasibility to maintain their livelihood.

3. Activity 3 BLUE PRINT IMPACT, INDICATORS, RISK ASSESSMENT TECHNICAL SOLUTIONS FOR INDUSTRY: Development of a methodology for probabilistic risk evaluation linked to MAR activities.

4. Activity 4 TECHNICAL SOLUTIONS FOR INDUSTRY: Development of design and construction criteria, and testing protocols for different exemplary MAR schemes and their benchmarking. Developing and testing appropriate engineering solutions, e.g. underground dams and wastewater hydraulic barriers, to convert karst aquifers into large groundwater storage reservoirs. The pros and cons of each technology will be assessed systematically, and compared to alternative solutions. Economic costs and benefits of MAR options for the various.

5. Activity 5 MODELLING (incl. water balance, water availability, climate change): Mathematical models to simulate the impact of MAR on aquifer hydrology and hydro geochemistry.

6. Activity 6 TRANSFERING KNOWLEDGE INTO PRACTICE: A complex and Specific Dissemination & Technology Transfer (D&TT) Plan will be designed based in the product previous analysis, business and development plans as well as target users. The Plan will contain several programs specially dedicated to the industrial branches, beneficiaries of the technology improvements. Different activities & materials will be developed to achieve an impact on the entire industrial driven sector.

PARTNERS

The list of the proposer partners of AG 128 is as follows:

- Laboratório Nacional de Engenharia Civil (AG 128 lead organization)
- Grupo Tragsa (Tragsa and Tragsatec)
- Technische Universität Darmstadt, Dept. of Applied Geosciences
- IWW Rheinisch-Westfälisches Institut für Wasserforschung gemeinnützige GMBH
- National Technical University of Athens
- Lavrion Technological & Cultural Park
- Universitat Politècnica de Catalunya-BarcelonaTech
- Helmholtz-Zentrum für Umweltforschung GmbH
- Universidade do Algarve
- Malta Resources Authority
- Paragon Europe
- Scuola Superiore Sant'Anna, SSSA
- Amphos 21
- Mekorot Water Company Israel
- SGI Studio Galli Ingegneria
- Carracillo Region Irrigation community
- Comunidad de Usuarios de Aguas de Valle Bajo y Delta del río Llobregat
- Terra, Ambiente e Recursos Hídricos
- Águas do Algarve, S.A.
- Santiuste Basin Irrigation community
- Autorità di Bacino dei Fiumi Isonzo Tagliamento Livenza Piave Brenta Bacchiglione (AAWA)
- Agência Portuguesa do Ambiente
- Athens Water Supply and Sewerage Company
- Agricultural Research Organization - the Volcani Center
- Water Services Corporation
- Spanish Water Technology Platform
- Institute of Communications and Computer Systems
- International Groundwater Resources Assessment Centre (IGRAC)
- Aquifer Storage And Recovery Systems
- Korean Institute of Geoscience and Mineral Resources (KIGAM)
- Regional governing body of Regione Toscana
- Local authority of Provincia di Lucca
- TEA Sistemi SPA
- Ingegnerie Toscane
- Kompetenz Zentrum Wasser Berlin (KWB)
- Federal University of Pernambuco (UFPE) , Brazil



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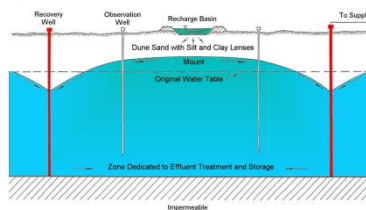
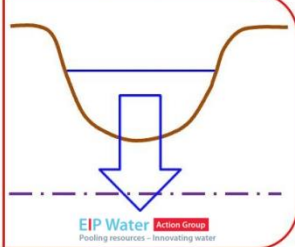
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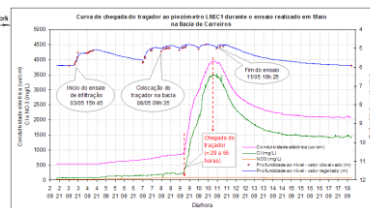
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Recharge - Recovery Scheme



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL



ACHIEVEMENTS

EIP Water AG 128 MARtoMARKet achievements:

Site:

- AG 128 MARtoMARKet EIP site available (<http://www.eip-water.eu/working-groups/mar-solutions-managed-aquifer-recharge-strategies-and-actions-ag128>)

Conferences, workshops, summer school:

- MAR at the Water R&D workshop; MAR Action Group was represented by TRAGSA, April 2014.
- MAR Modelling Workshop in Lisbon, July 2014
- MAR component of IWA 2014 *Inspiring Change*, session on "Adaptation to climate change impacts: urban resiliency", September 2014
- WARBO summer school, Lisbon, October 2014
- Geofluid MAR Workshop in Piacenza, Italy, October 2014
- MAR4FARM Workshop in Arenales and Santuste, Spain, November 2014

DEMO Sites:

- Infiltration (Set 2014), tracer (Out 2014) and clogging (July 2014) experiments in Campina de Faro aquifer, Algarve, Portugal aiming data gathering for groundwater rehabilitation through artificial recharge using rain/river water surpluses
- Large well infiltration tests in Campina de Faro and Querença-Silves aquifers (April 2014), Algarve, Portugal, aiming extra groundwater storage in wet years to be usable later during drought years
- Laboratory soil-column infiltration tests with Campina de Faro, Querença-Silves and Melides soils for further use in SAT basins to be constructed in 2015

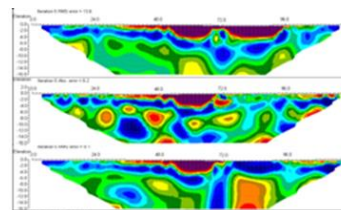
Books:

- Managed Aquifer Recharge Sites - Knowledge Basis I, under the related DEMAUF FP7 project: M11_1 catalogue of European MAR applications_plus_appendix.pdf
- Managed Aquifer Recharge - Knowledge basis II - two GABARDINE (Groundwater artificial recharge based on alternative sources of water) project reports are available on Portuguese and Spanish (Catalonia) Case-studies
- Managed Aquifer Recharge - Knowledge basis III - TRAGSA contributes a new publication on one decade of managed aquifer recharge in the Santiuste aquifer, Spain

Papers:

- GAALOUL, N., LEITÃO, T. E. e LOBO FERREIRA, J.P., 2014 - Artificial recharge enhancement to prevent seawater intrusion in the coastal aquifer of Korba-Mida (Tunisia), Congresso da IWA - World Water Congress & Exhibition 2014, Lisboa, 21 a 25 de setembro de 2014, 8 pp.
- LOBO FERREIRA, J.P., ESCALANTE, E., SCHÜTH, C. e LEITÃO, T.E., 2014 - Demonstrating Managed Aquifer Recharge (MAR) as a Solution for Water Scarcity and Drought in Portugal and Spain. "12.º Congresso da Água /16.ª ENASB/XVISILUBESA", organizado pela APRH, APESB e ABES, Lisboa, 5-8 de março de 2014, 15 pp.

SCIENTIFIC SUPPORT & NETWORKING

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Obrigado pela vossa atenção !