

NEWS LETTER





MEDSAL PROJECT

Salinization of critical groundwater reserves in coastal Mediterranean areas: Identification, risk assessment and sustainable management with the use of integrated modelling and smart ICT tools.

Newsletter subjects

- Info day Rhodope (**pages 3-6**)
- Info day Poliba (**pages 7-9**)
- Info day Bouficha (**pages 10-12**)

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As part of the Medsal project activities a series of public events addressed to stakeholders and scientists, to disseminate the project's research results regarding each study area and discussing the optimal management of water resources.

Info day Rhodope (Greece) 20 February 2023

The “Open Info Day” for the pilot site of Rhodope was held on February 20 2023 at the “Georgiou Pavlidis” Hall in the building of the Region of Eastern Macedonia – Thrace in Komotini (Rhodope, Greece). This event was organized within the frame of MEDSAL project, aiming to maximize the dissemination and outreach of the outcomes from the Rhodope pilot site and constructive discussion with the stakeholders and the farmers.

Initially, the MEDSAL project was presented, and then, the results of the hydrogeochemistry methods, the modelling and the sensors were presented. In the second part of this event, the proposed management plans were proposed, and a constructive discussion on these plans followed in a round table with the stakeholders and the farmers.

In the round table, the participation from audience was interesting, as the concerns were formulated and the ways in which they can be resolved.

Totally, thirty six (36) participants attended the event in person. Stakeholders, scientists, students and farmers attended with great interest and actively participate in the round table





ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΥΠΟΥΡΓΕΙΟ
ΑΝΑΠΤΥΞΗΣ ΚΑΙ ΕΠΕΝΔΥΣΕΩΝ

ΓΓΕΚ
ΓΕΝΙΚΗ ΓΡΑΜΜΑΤΕΙΑ
ΕΡΕΥΝΑΣ ΚΑΙ ΚΑΙΝΟΤΟΜΙΑΣ



Το PRIMA είναι μια πρωτοβουλία του άρθρου 185 της
Συνθήκης Λεξουρίας της Ε.Ε. και συγχρηματοδοτείται από
τον «Ορίζοντα 2020», το Πρόγραμμα Πλαίσιο της Ε.Ε. για την
Έρευνα και την Καινοτομία

Α ΜΕΡΟΣ: Το έργο MEDSAL και η πιλοτική περιοχή Ροδόπης	
17:30-18:00	Προσέλευση-εγγραφές
18:00-18:15	Χαιρετισμοί
18:15-18:25	Παρουσίαση το έργου MEDSAL (Δρ Ευάγγελος Τζιρίτης, Εντεταλμένος Ερευνητής ΙΕΥΠ-ΕΛΓΟ ΔΗΜΗΤΡΑ, Συντονιστής Έργου MEDSAL)
18:25-18:35	Το πρόβλημα της αλατότητας στο υπόγειο υδατικό σύστημα της παράκτιας Ροδόπης (Αικατερίνη Σαχσαμάνογλου, MSc Γεωλόγος, Επιστημονική Συνεργάτης ΙΕΥΠ-ΕΛΓΟ ΔΗΜΗΤΡΑ)
18:35-18:45	Χωροχρονική εξέλιξη του φαινομένου της υφαλμύρισης (Δρ Χαράλαμπος Δουλγέρης, Εντεταλμένος Ερευνητής ΙΕΥΠ-ΕΛΓΟ ΔΗΜΗΤΡΑ)
18:45-18:55	Το δίκτυο αισθητήρων MEDSAL (Δρ Βασίλειος Πισινάρας, Εντεταλμένος Ερευνητής ΙΕΥΠ-ΕΛΓΟ ΔΗΜΗΤΡΑ)
18:55-19:10	Ερωτήσεις-Τοποθετήσεις Α Μέρους
19:10-19:30	Διάλειμμα
Β ΜΕΡΟΣ: Διαβούλευση προτάσεων διαχειριστικού σχεδίου παράκτιας περιοχής Ροδόπης	
19:30-19:50	Προτεινόμενο σχέδιο διαχείρισης υδατικών πόρων της παράκτιας περιοχής Ροδόπης (Δρ Ανδρέας Παναγόπουλος, Διευθυντής Ερευνών ΙΕΥΠ-ΕΛΓΟ ΔΗΜΗΤΡΑ)
19:50-21:00	Διαβούλευση προτεινόμενου σχεδίου διαχείρισης (στρογγυλή τράπεζα) με τη συμμετοχή προσκεκλημένων ενδιαφερόμενων μερών και του κοινού

Το έργο χρηματοδοτείται από τη Γενική Γραμματεία Έρευνας και Καινοτομίας του Υπουργείου Ανάπτυξης και Επενδύσεων στο πλαίσιο του προγράμματος PRIMA. Το PRIMA είναι μια πρωτοβουλία του άρθρου 185 και συγχρηματοδοτείται από τον Ορίζοντα 2020, το Πρόγραμμα της Ευρωπαϊκής Ένωσης για την Έρευνα και την Καινοτομία



ΙΕΥΠ
Ινστιτούτο Εδαφικών Πόρων







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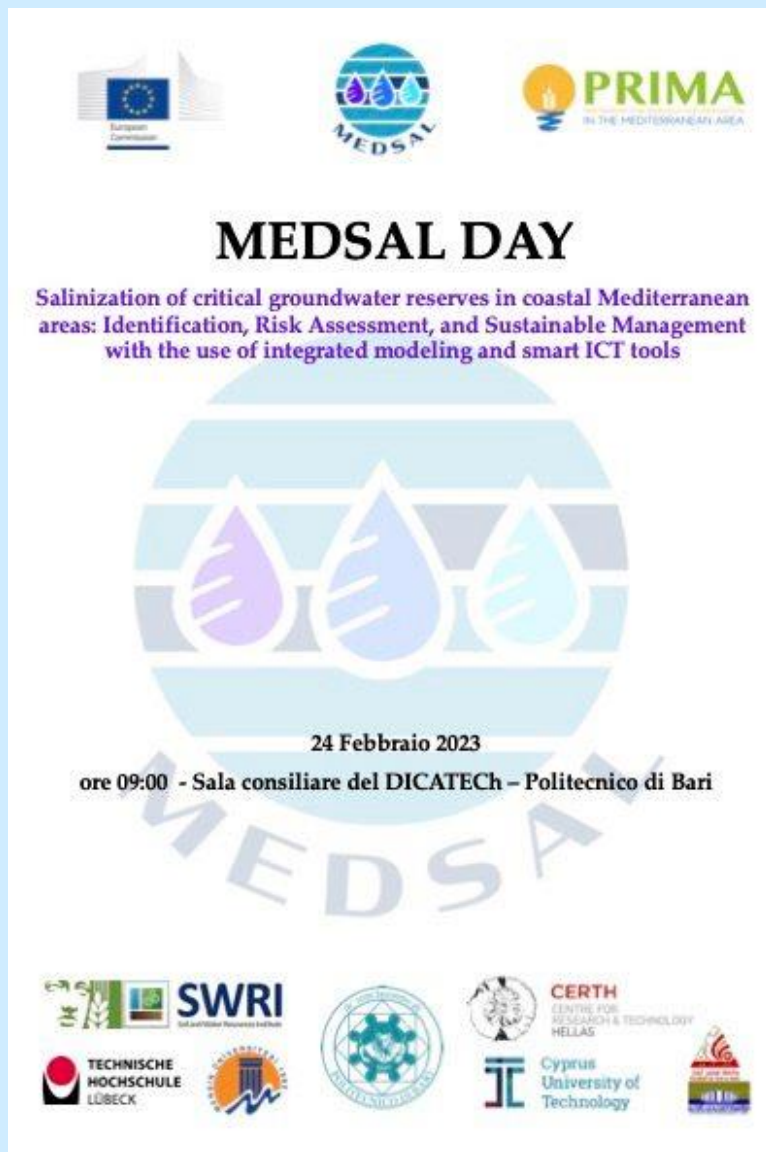
Info Day Poliba (Italy) 24 February 2023

The “Open Info Day” in Salento pilot site was held at the DICATECh Department of the Polytechnic University of Bari on February 24 2023. Fifty-four stakeholders participated in the event, in addition to approximately fifty-six participants using a public online link to the event.

Before showing the results, the MEDSAL project was presented, briefly illustrating the partners, objectives, motivations and approaches of the projects. After that, the chairman, Prof. Vito Iacobellis, introduced the five presentations prepared by the POLIBA group of the MEDSAL project to illustrate the main results of the Salento Test site.

In the end, the chairman has to lead a round table discussion with the person in charge of the Water Resources Service of the Apulia Region, a responsibility of the Apulian Water Authority, a representative of the Southern Apennine District Basin Authority, the Industrial Director of the AQP S.p.A, the Apulian Water Utility, a person in charge for the irrigation consortia of the Salento area, the chief researcher of the CNR-IRPI, the Hydrogeological Protection Research Institute, and, finally, a representative of the CNR-IRSA, the Water Research Institute.

The work closed with a joint proposal to work in synergy between the different parties so that the scientific community will be able to make a fundamental contribution in identifying, with scientific rigour, the most suitable methodologies and approaches to control the salinization and pollution of groundwater and guarantee this important resource for future generations.





Le attività del Progetto EU-PRIMA-MEDSAL, iniziato nel settembre 2019 ed oggi giunto alla sua conclusione, hanno visto come teatro operativo l'acquifero Mesozoico del Salento.

Il MEDSAL Day è dedicato alla illustrazione di tali attività, ma soprattutto dei risultati di interesse delle istituzioni private, pubbliche, e di ricerca coinvolte nel prelievo, distribuzione, uso, gestione e studio delle risorse idriche sotterranee del Salento.

I principali temi proposti intendono contribuire a rispondere ad alcune domande chiave:

- quali sono i problemi delle acque sotterranee nel contesto dell'acquifero del Salento?
- è possibile migliorare le pratiche di monitoraggio alla luce di tali (antiche ed emergenti) problemi e dei rischi connessi al corrente cambio climatico?
- quali azioni di gestione dovrebbero essere poste in atto per un'adeguata protezione della risorsa?

L'applicazione di tecniche statistiche, data processing, modellazione e geostatistiche ai dati chimici del monitoraggio (chimici, fisici ed isotopici), serie temporali derivanti dalla sensoristica idrogeologica e profili multi-parametrici ha fornito nuovi elementi di conoscenza riguardo:

- tempi di risposta dell'acquifero profondo del Salento all'input climatico (ricarica, siccità meteorologica),
- comportamento idraulico del sistema acquifero,
- dinamica ed evoluzione della salinizzazione delle acque dolci di falda,
- indicatori di salinizzazione e soglie di background,
- inquinamento emergente e vulnerabilità complessiva della risorsa

Il tutto sarà inquadrato all'interno di un modello concettuale del «sistema acquifero» aggiornato in base alla ridefinizione dei flussi regionali e a nuovi scenari geo-strutturali.

Ore 9.00 **Saluti**
Magnifico Rettore Politecnico di Bari
Direttore DICATECH

Prof. Ing. F. Cupertino
Prof. Ing. L. Damiani

Ore 9.20 **Dott. Ing. A. Paris**
Il Progetto EU-PRIMA MEDSAL (2019-2023): ambito, finalità e sviluppo delle attività

Ore 9.30 **Ing. M.R. Alfio**
Short Time Series Analysis e correlazioni tra indicatori climatici e livelli di falda: caratterizzazione idrodinamica dell'acquifero Mesozoico del Salento

Ore 9.50 **Dott. Ing. A. Paris**
Sensoristica puntuale e profili multi-parametrici in acquiferi costieri: evoluzione temporale della distribuzione tridimensionale della salinità

Ore 10.10 **Prof. Ing. G. Balacco**
Salvaguardia delle acque dolci nel contesto costiero antropizzato

Ore 10.30 **Coffee Break**
Ore 10.50 **Prof. Ing. G. Balacco**

Dinamica della salinizzazione attraverso l'applicazione combinata di tecniche di statistica multivariata (MSVA) e di analisi di facies idrochimiche (HFD)

Ore 11.10 **Prof. M.D. Fidelibus**
Geochimica e idrologia isotopica: elementi per una nuova concettualizzazione dei meccanismi di salinizzazione degli acquiferi costieri del Mediterraneo.

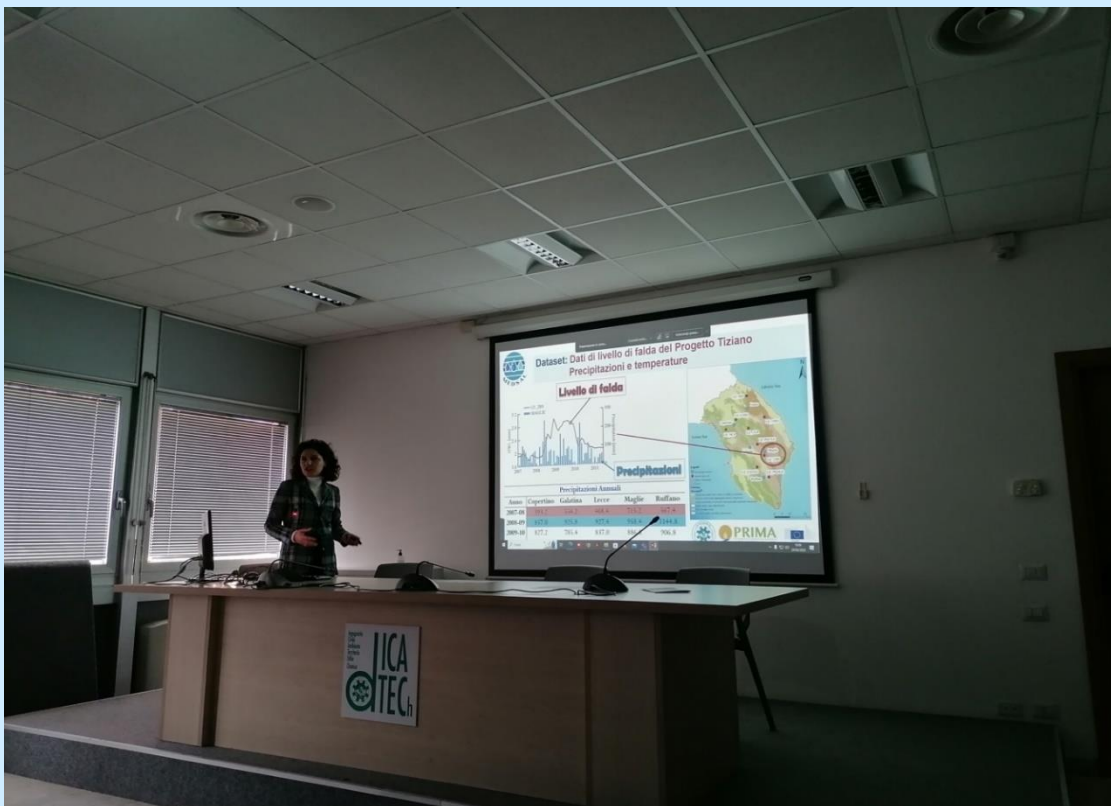
Ore 11.30 **Prof. M.D. Fidelibus**
Conclusioni - Geo-strutture, flussi regionali e input antropici: ricadute del modello concettuale aggiornato del "sistema acquifero" del Salento sulle pratiche di monitoraggio e gestione delle acque sotterranee.

Ore 11.50 **Tavola Rotonda**
Dirigente Sez. Risorse Idriche Regione Puglia
Segretario Generale Autorità di Bacino Distrettuale App. Meridionale
Direttore Generale AIP
Direttore Generale AQP S.p.A.
Dir. Area Agraria Consorzio Ugento e Li Foggi e Arneo
Primo Ricercatore IRPI
Dirigente di Ricerca IRSA

Ing. Andrea Zotti
Dott.ssa Vera Corbelli
Dott. Cosimo F. Ingresso
Dott.ssa Francesca Portincasa
Dott. Antonio Bruno
Ing. Maurizio Polemio
Dott. Claudio Di Iaconi

Ore 13.00 **Chiusura dei lavori**





Info Day Bouficha (Tunisia) 24 February 2023

As part of the activities of the MEDSAL project, the MEDSAL team of the FST organized an info day on February 24, 2023 in Belvedere Hotel in Tunis to present and discuss the main results found within the framework of the project for the stakeholders. Twenty-three (23) participants were present including four participants (4) from the Sousse Regional Agricultural Development Commission (CRDA Sousse), two (2) participants from the national water exploitation and distribution company (SONEDE Tunisia) and one (1) participant from the General Directorate of Water Resources of Tunis (DGRE Tunisia).

The day began with opening words from the President of Tunis El Manar University, the Vice-Dean of the Faculty of Sciences of Tunis and the Director of the Petroleum Geology, Water and Environment Laboratory. Then the coordinator presented the project and recalled the different objectives and methodology adopted. Several communications were then presented by the members of the project (according to the program) and a rich discussion was led following each intervention and the moment of debate.

At the end of the day, we presented the project's perspectives based on the various stakeholders' recommendations. These perspectives are:

- Deepening the study of the geometry of aquifer reservoirs: limits, structure, boundary conditions.
- Use of geophysical data, water and oil drilling, geochemistry.
- Geological modeling.
- Aquifer parameters are poorly known in places or over the entire modeled domain (permeability/transmissivity, porosity, storage coefficient, dispersivity).
- Therefore, the models' results are tainted with uncertainties, using stochastic modeling.
- Development of hydrological model / isotopic geochemistry for a more precise estimate of the natural recharge before and after the construction of the Rmel dam.
- Taking into account the variation in sea level under the effect of climate change in the modeling of marine intrusion.



MEDSAL info day:
February 24, 2023

MEDSAL Salinization of critical groundwater reserves in coastal Mediterranean areas: Identification, risk assessment and sustainable management with the use of integrated modelling and smart ICT tools

Hôtel Belvédère, Tunis, Tunisie

MEDSAL DAY

Salinisation des eaux souterraines dans les zones côtières méditerranéennes : identification, évaluation des risques et gestion durable à l'aide des outils de modélisation intégrée et TIC intelligents (MEDSAL)

24 février 2023 à l'hôtel Belvédère, Tunis, Tunisie

Programme PRIMA

PRIMA (Partenariat pour la Recherche et l'Innovation en Méditerranée) vise à renforcer les capacités de recherche et d'innovation et à développer des connaissances et des solutions innovantes pour la gestion intégrée de l'eau dans la région méditerranéenne

Projet MEDSAL

Ce projet sur la salinisation des eaux souterraines en Méditerranée a démarré le 09/01/2019 dans le cadre du programme PRIMA. Ce projet d'une durée de 42 mois, est un programme conjoint à entreprendre dans le cadre du réseau de coopération euro-méditerranéenne des organismes de financement des pays méditerranéens et des États associés de l'UE, avec un financement national.

Objectifs de « MEDSAL info day »

Cet événement ayant pour thématique la gestion des ressources en eau par les méthodes géochimiques et la modélisation entre dans le cadre des activités du projet MEDSAL. Il a pour principaux objectifs de présenter les principaux résultats obtenus dans le cadre du projet et discuter avec les parties prenantes les différentes perspectives.

Programme de l'atelier

8h30-9h00	Réception et inscription
9h00-9h30	Mot d'ouverture de Monsieur le Recteur de l'UTM (Prof. Moez CHAFRA) Mot d'ouverture de Monsieur Le Doyen de la FST (Prof. Nouredine AMDOUNI) Mot d'ouverture de Monsieur le Directeur du laboratoire ESGP (Prof. Mohamed SOUSSI)
9.30-10h00	Tour de table
10h00-10h30	Rappel des objectifs du projet et présentation de l'événement (Dr. Fadoua HAMZAOU - Coordinatrice du projet MEDSAL-FST)
10h30-11h00	Géochimie des eaux de la nappe de Bouficha (Mme Madina ARFAOUI , Doctorante projet MEDSAL-FST)
11h00-11h20	Architecture et connectivité du système aquifère de Bouficha : Approches géologiques et géochimique (Mme Meriem BELHARETH , étudiante Mastère)
11h20-11h40	Pause-café
11h40-12h10	Modélisation hydrogéologique de la nappe de Bouficha (Mme Hela ALAYA , Doctorante projet MEDSAL-FST)
12h10-12h30	Impact du barrage Rmel sur les ressources en eau de la plaine de Bouficha (Mme Salma SAID , étudiante Mastère)
12h30-14h00	Dejeuner
14h00-14h20	Vulnérabilité de la nappe de Bouficha à la pollution par les nitrates (Mme Madina ARFAOUI , Doctorante projet MEDSAL-FST)
14h20-14h40	Perspectives (Prof. Mounira ZAMMOURI)
14h40-16h00	Table ronde





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