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# Mediterranean Integrated System for Water Supply «MEDISS»

project Duration:  
August 1, 2019 - July 31, 2022

Technical meeting and study visit  
8 - 10 November 2021  
Aqaba - Jordan

**WP3 ACTIVITIES**





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## WP3 ACTIVITIES - ENAS Board of Experts (BoE) regulation

**WP3 is a technical WP that embraces the whole project and it is aimed to:**

- collecting relevant and consistent baseline data in the 4 MEDISS areas;
- analyzing and organizing data in a comprehensive database;
- provide target values and tools for monitoring;
- evaluate MEDISS impact on water, soils and crops during and after pilot tests;
- identify up-scaling opportunities and elaborate solid proposal for future funding.



all these activities are  
coordinate by BoE

**ENAS coordinates the activities of the WP3**



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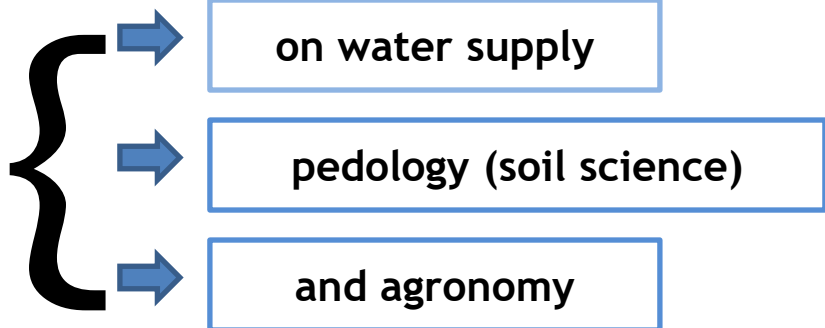
## WP3 ACTIVITIES Board of Experts (BoE) regulation

### Board of Experts (BoE)

Technical support of WP3 activities composed by:

- 1 (one) chair (Eng. Monther Hind);
- 2 experts on socio-economic analysis;

2 experts per area with relevant expertise





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***Summary of the results of the Chemical  
- Biological analyzes of the water  
monitoring of piezometers  
n. 1 and n. 2 of Arborea (Oristano).***



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## LIST OF CHEMICAL AND MICROBIOLOGICAL PARAMETERS ANALYZED IN THE WATERS

CHEMICAL PARAMETERS	METHOD OF ANALYSIS	CHEMICAL PARAMETERS	METHOD OF ANALYSIS
Temperature	APAT CNR IRSA 2100	Alluminum	EPA 6020b
pH	APAT/IRSA- CNR 2060	Alluminio dissolved	EPA 6020b
Electric conductivity at 25 °C	ISS.BDA.022.rev00	Iron	EPA 6020b
Dissolved oxygen	HACH LDO METHOD 10360	Dissolved iron	EPA 6020b
Turbidity	APAT/IRSA- CNR 2110	Manganese	EPA 6020b
Alkalinity	APAT/IRSA- CNR 2010 Metodo B	Dissolved Manganese	EPA 6020b
Redox potential	ISO metodo 11271:2002	Arsenic	EPA 6020b
Fixed residue at 180 ° C	APAT/IRSA- CNR 2090 Metodo A	Dissolved Arsenic	EPA 6020b
Bicarbonates	APAT/IRSA- CNR 2010 Metodo B	Cadmium	EPA 6020b
Total hardness	APAT/IRSA- CNR 2040 Metodo A	Dissolved Cadmium	EPA 6020b
Calcium	ISS.CBB.038.rev00	Chrome	EPA 6020b
Magnesium	ISS.CBB.038.rev00	Dissolved Chrome	EPA 6020b
Potassium	ISS.CBB.038.rev00	Mercury	EPA 6020b
Sodium	ISS.CBB.038.rev00	Dissolved Mercury	EPA 6020b
Chlorides	ISS.CBB.037.rev00	Nickel	EPA 6020b
Nitrates	ISS.CBB.037.rev00	Dissolved nickel	EPA 6020b
Sulfates	ISS.CBB.037.rev00	Lead	EPA 6020b
Total Nitrogen	APAT/IRSA- CNR 4060	Dissolved Lead	EPA 6020b
Ammonia Nitrogen	APAT/IRSA- CNR 4030 - Metodo A1	Copper	EPA 6020b
Nitrous nitrogen	APAT/IRSA- CNR 4050	Dissolved Copper	EPA 6020b
Total phosphorus	APAT/IRSA- CNR 4060	Zinc	EPA 6020b
Reactive phosphorus	APAT/IRSA- CNR 4110 Metodo A1	Dissolved Zinc	EPA 6020b
Total Organic Carbon	APAT/IRSA- CNR 5040		
<b>MICROBIOLOGICAL PARAMETERS</b>		<b>METHOD OF ANALYSIS</b>	
<i>Escherichia coli</i>		APAT IRSA CNR 7030	
<i>Counting of colonies on Agar at 36 ° C</i>		ISO 6222	
<i>Counting of colonies on Agar at 22°C</i>		ISO 6222	

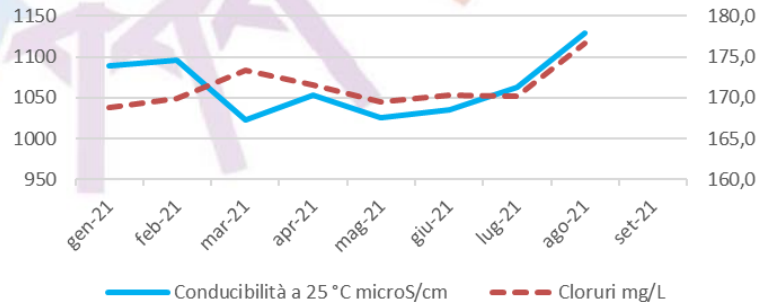


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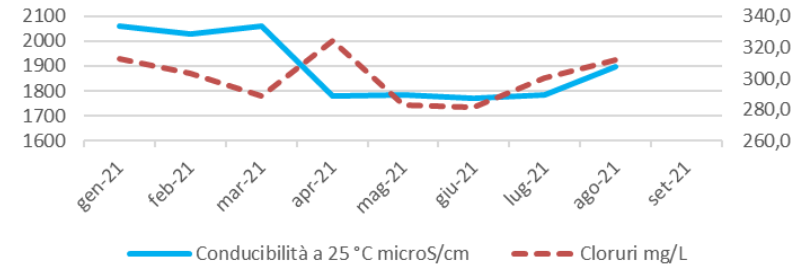
### Piezometer n. 1

#### Comparison Electric Conductivity- Chlorides



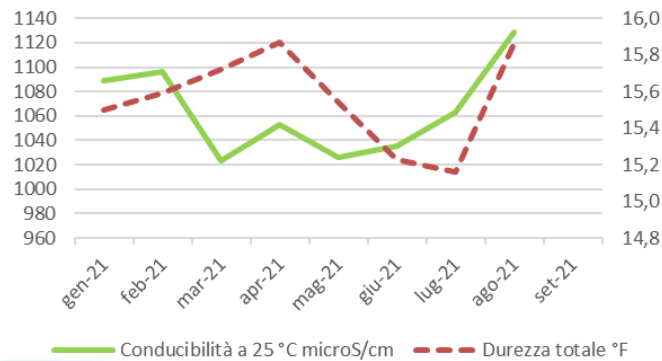
### Piezometer n. 2

#### Comparison Electric Conductivity- Chlorides



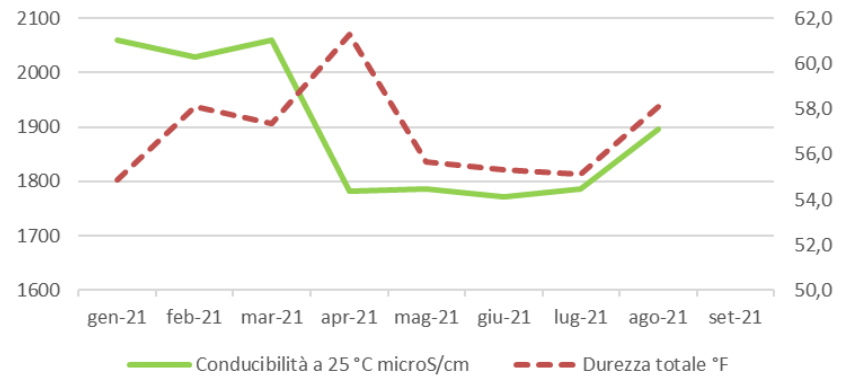
### Piezometer n. 1

#### Electric Conductivity- Hardness



### Piezometer n. 2

#### Electric Conductivity- Hardness

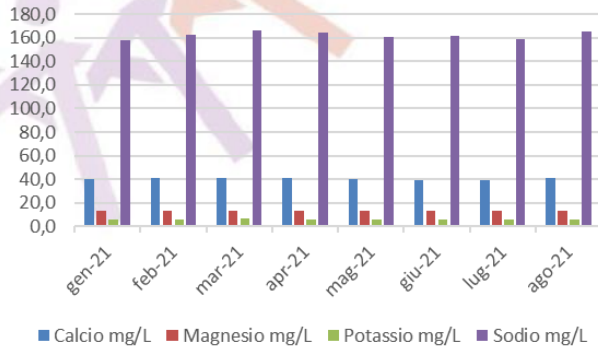




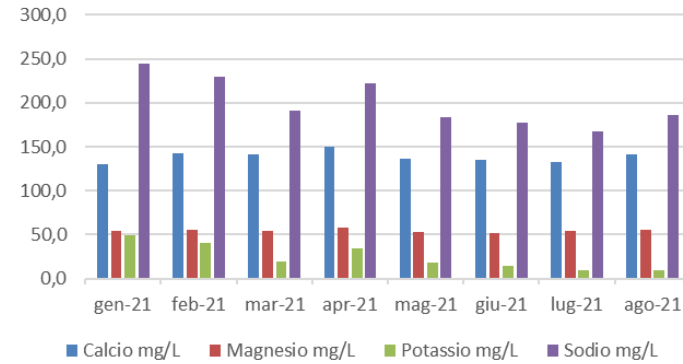
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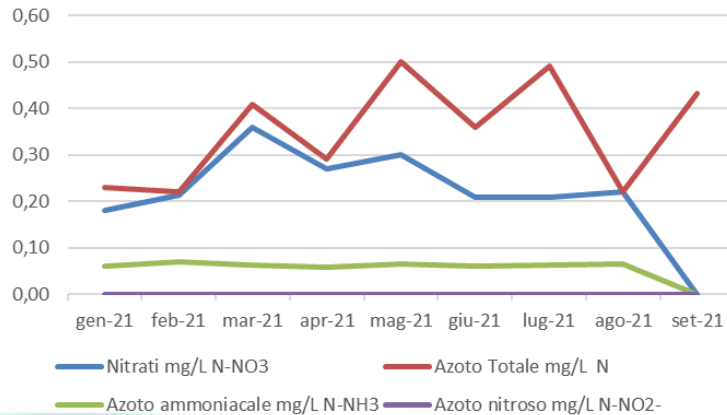
Piezometer n. 1  
Comparison Ca - Mg - Na - K



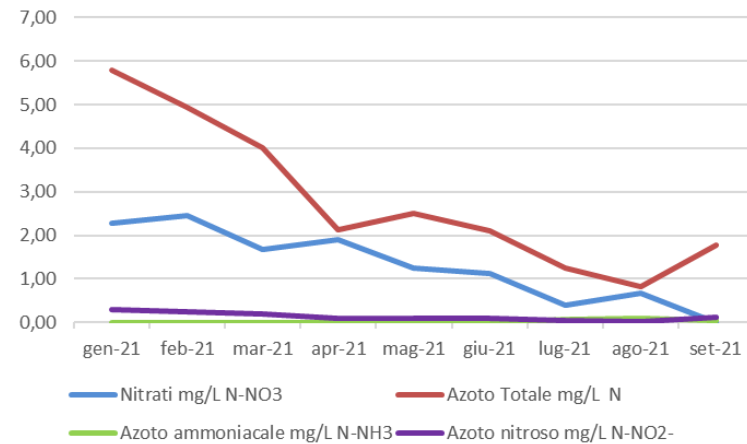
Piezometer n. 2  
Comparison Ca - Mg - Na - K



Piezometer n. 1  
Comparison Nitrogenous Form



Piezometer n. 2  
Comparison Nitrogenous Form



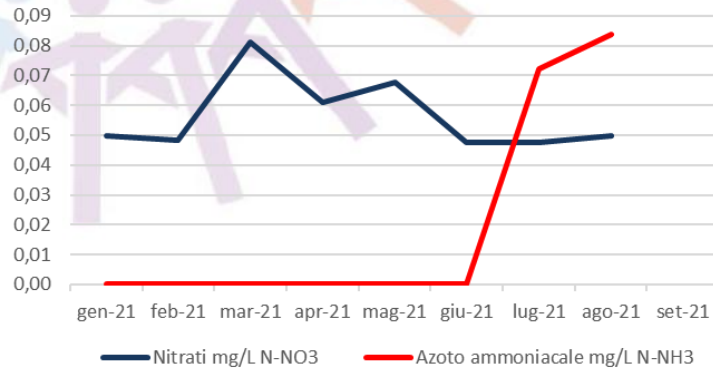


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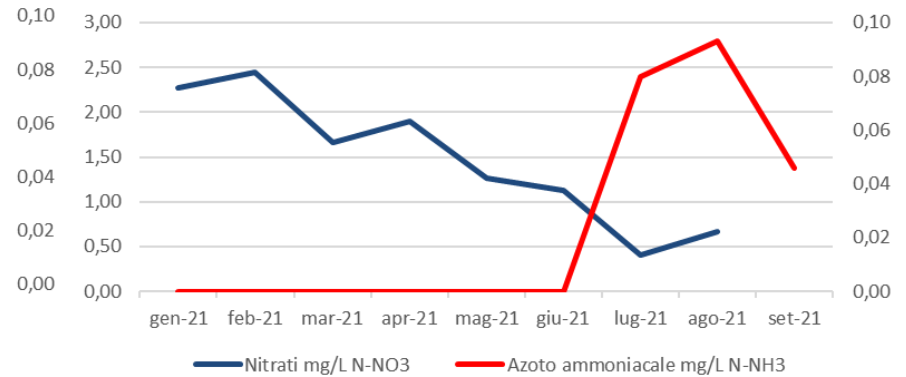
### Piezometer n. 1

#### Comparison Nitrates - Ammonia



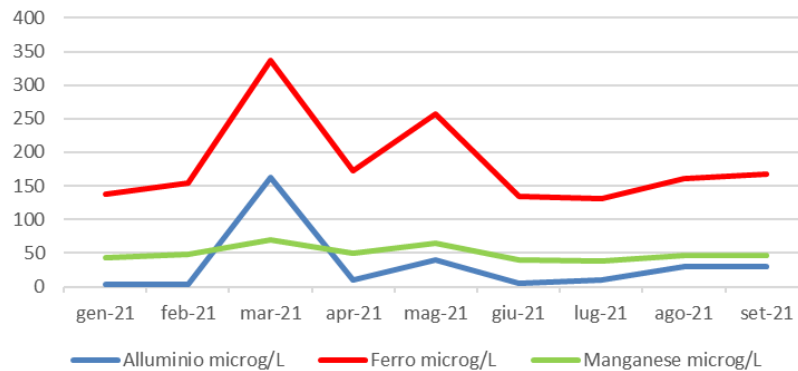
### Piezometer n. 2

#### Comparison Nitrates - Ammonia



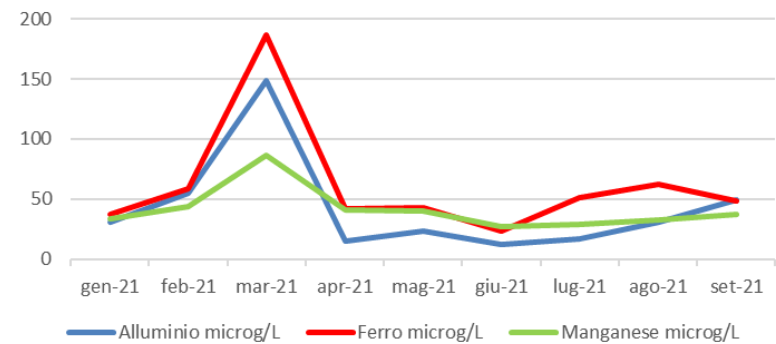
### Piezometer n. 1

#### Comparison Al - Fe - Mn



### Piezometer n. 2

#### Comparison Al - Fe - Mn





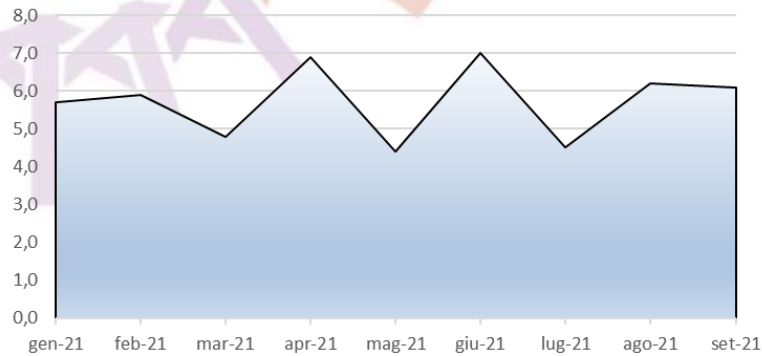


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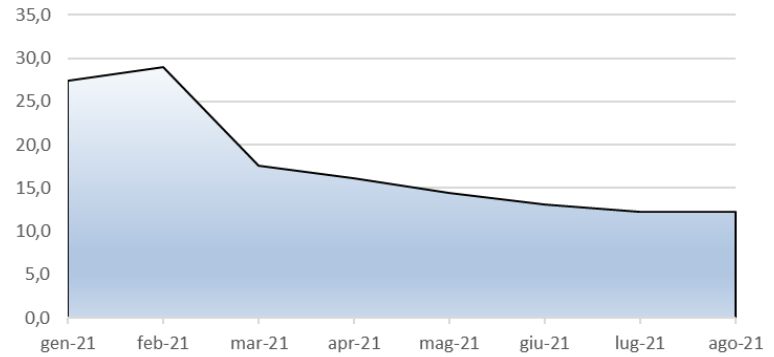
### Piezometer n. 1

Comparison Total Organic Carbon (mg/L)



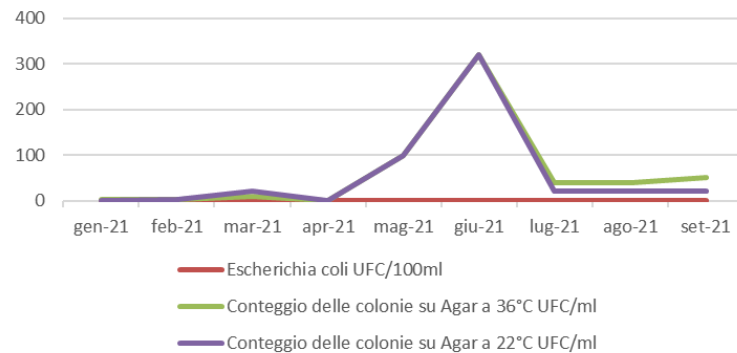
### Piezometer n. 2

Comparison Total Organic Carbon (mg/L)



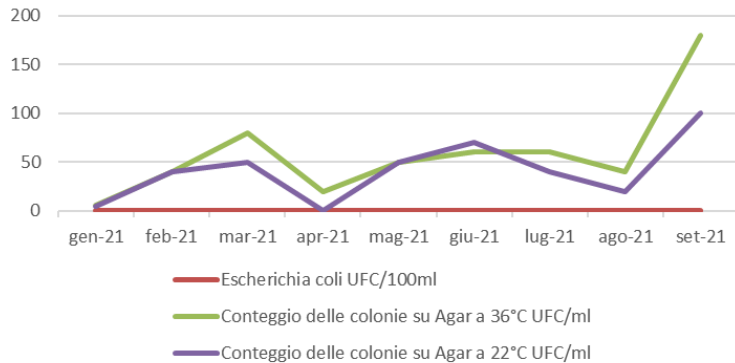
### Piezometer n. 1

Comparison Microbiological Parameters



### Piezometer n. 2

Comparison Microbiological Parameters





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## COMMENT ON THE RESULTS

The analysis of the results, relating to the entire monitoring period (January 2021 - September 2021), shows that **the waters of the piezometer n. 2 were characterized by higher levels than those of piezometer n. 1.**

In particular in the piezometer n. 2 higher values were found for what concerns the parameters:

- **Electric conductivity;**
- **Chlorides;**
- **Hardness, Ca, Mg, Na and K;**
- **Nitrates;**
- **Total Organic Carbon (TOC).**

Instead, for the parameters: **Ammonia and Microbiological**, the concentrations detected in the piezometer n. 1 are, in general, comparable with those of the piezometer n. 2.