WG3 - Total value of saline ecosystems and landscapes
Harnessing Plants and Microbial Solutions for the Restoration and Valorization of Saline Lands

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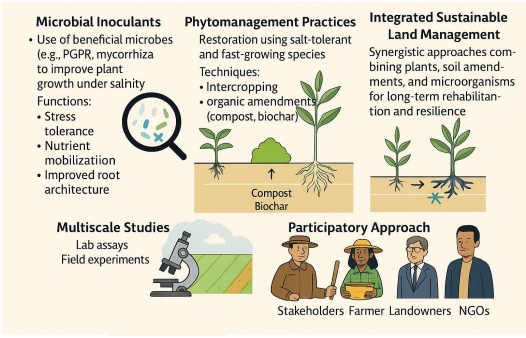
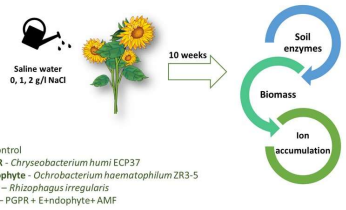
KEY AREAS OF EXPERTISE



PROJECTS/CASE STUDIES

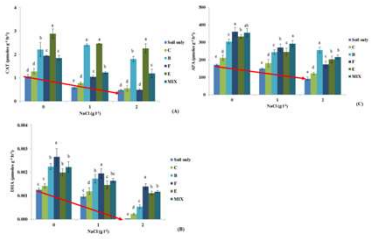
1. Promotion of sunflower growth under saline water irrigation by the inoculation of beneficial microorganisms

1 Experimental design



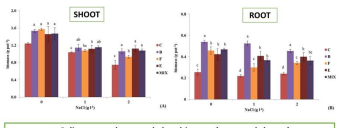
C- Control
PGPR - *Chryseobacterium humi* ECP37
Endophyte - *Ochrobacterium haematophilum* ZR3-5
AMF – *Rhizophagus irregularis*
Mix – PGPR + E+ndophyte+ AMF

2 Soil enzymatic activity



Microbial inoculants improved the activity of soil enzymes → mitigation of salt stress in soil functions

3 Plant biomass

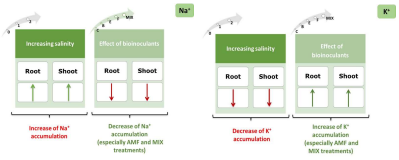


- Saline water decreased plant biomass (roots and shoots)
- Bioinoculants mitigated the adverse effects of salt by increasing biomass production

↑ 62-85% (ROOT)

Inoculation provided a protective effect on sunflower under salt stress, with AMF and MIX emerging as the most effective treatments

4 Ionic balance



Inoculated plants showed higher K^+ accumulation and lower Na^+ accumulation in their tissues

PROJECTS/CASE STUDIES

2. Project Sun2Fork (PRIMA – on going)

Objective: to develop a sustainable greenhouse farming system by integrating energy-efficient photovoltaics, hydroponics, sustainable substrates, microbial inoculants, and drainage water reuse under salinity stress conditions

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Evaluation of microbial inoculants treatments on tomato growth under salinity stress

ECOSYSTEM SERVICES & ECONOMIC IMPACTS

Microbial Inoculants and Sustainable Practices (e.g., crop rotation, organic amendments) in Saline Areas

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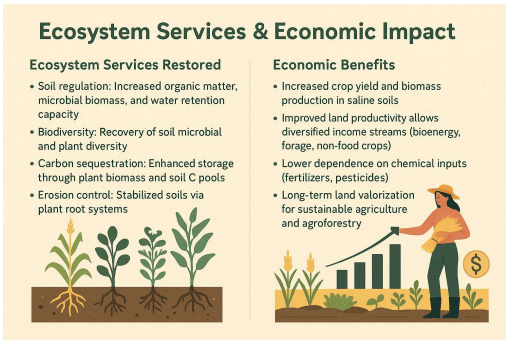

CONTRIBUTION TO SUSTAIN WG3 - TASKS

T3.1 Database Preparation
Prepare database of best practices

T3.3 Valuation Techniques
Discuss applicable valuation techniques

T3.4 Collect Studies
Collect studies showcasing economic potential

ACKNOWLEDGEMENTS

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