



Impact Assessment of Salinization Affected Soil on Greenhouse Crops using SALTMED

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Here we assess the effects of soil salinization on greenhouse crops and the potential benefits of rainwater harvesting as a soil amelioration technology. The study deals with the following scenarios: (a) variation of irrigation water salinity from 3,000 $\mu\text{S}/\text{cm}$ to 500 $\mu\text{S}/\text{cm}$ through mixing with rainwater, (b) crop substitution for increased tolerance and (c) climatic variability to account for the impact of climate change. In order to draw meaningful conclusions, a model that takes into account vegetation interaction, soil, irrigation water and climate variables is required. The SALTMED model is a reliable and tested physical process model that simulates evapotranspiration, plant water uptake, water and solute transport to estimate crop yield and biomass production under all irrigation systems. SALTMED is tested with the above scenarios in the RECARE FP7 Project Case Study of Timpaki, in the Island of Crete, Greece. Simulations are conducted for typical cultivations of *Solanum lycopersicum*, *Capsicum annum* and *Solanum melongena*. Preliminary results indicate the optimal combination from a set of solutions concerning the soil and water parameters can be beneficial against the salinization threat. Future research includes the validation of the results with field experiments.

Keywords: salinization, greenhouse, tomato, SALTMED, rainwater, RECARE