



Other teams focused on this topic

LGE

Laboratoire Génie de l'Environnement Industriel et des risques industriels

et naturels

(EMA)

20 scientists

Director: Miguel Lopez-Ferber, Miguel.lopez-ferber@ema.fr www.ema.fr/LGEI/

UMR CEFE

Centre of Evolutionary and Functional Ecology

(CNRS, UM1, UM2, UM3, Montpellier SupAgro, CIRAD, EPHE)

72 scientists

Director: Jean-Dominique Lebreton, direction@cefe.cnrs.fr www.cefe.cnrs.fr

UMR SYSTEM

Tropical and Mediterranean Cropping System Functioning and Management

(CIRAD, INRA, Montpellier SupAgro)

22 scientists

Director: Jacques Wery, wery@supagro.inra.fr http://umr-system.cirad.fr

UPR

Environmental Risks of Recycling

(CIRAD)

25 scientists

Director: Hervé Saint Macary, herve.saint macary@cirad.fr www.cirad.fr/ur/recyclage_risque

UPR

Functioning and Management of Tree-Based Planted Ecosystems

(CIRAD)

15 scientists

Director: Jean-Pierre Bouillet, <u>jean-pierre.bouillet@cirad.fr</u> www.cirad.fr/ur/ecosystemes plantations

US

Water, Soil and Plant Analysis

(CIRAD)

17 scientists

Director: Alain Aventurier, alain.aventurier@cirad.fr www.cirad.fr/ur/analyses

UMR EMMAH

Environnement Méditerranéen et Modélisation des Agro-Hydrosystèmes (INRA, UAPV)

37 scientists

3 / scientist

Director: Liliana Di Pietro, dipietro@avignon.inra.fr

www.avignon.inra.fr/les_recherches__1/ liste_des_unites/emmah_environnement_ mediterraneen_et_modelisation_des_agro_ hydrosystemes

Salinity management in irrigated areas: Fatnassa Oasis, Tunisia

Salinization involves a gradual increase in the soil salt concentration under the influence of a more or less saline irrigation water supply in specific hydrological conditions: arid climate, shallow water table, insufficient leaching, etc. This phenomenon affects 77 million ha, or 28% of the irrigated area, 8% of which are severely affected. Excessive salinity levels are detrimental to farms, reducing yields, making soils unsuitable for growing certain sensitive crops, or increasing production costs. Arid southern Mediterranean regions are especially vulnerable to salinization risks. UMR G-EAU and the Tunisian *Institut National de Recherche du Génie Rural des Eaux et Forêts* deal with the salinity management problem at Fatnassa Oasis (Tunisia) within the framework of the SIRMA (Économie d'Eau dans les Systèmes Irrigués au Maghreb) project. The first line of research is aimed at gaining insight into the nature of salinization processes in order to identify causes that could potentially be overcome, while differentiating processes that occur on the hydraulic system scale and on the plot scale.

This first line is based on the measurement and modelling of biogeochemical processes and water and salt balances as a function of flows at the periphery of the oasis (irrigation, drainage, natural groundwater flow and evapotranspiration), and the consequences on the soil salinity trends. The second line is aimed at gaining insight into farmers' adaptations and the production system performances with respect to salinity, soil fertility and water constraints. This line of research involves a triple analysis: (i) of the perception of constraints and farmers' practices; (ii) of how the area functions, including collective management of the irrigation system, individual strategies and practices, state of the environment and crop performances; and (iii) of farmers' income patterns.

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For further information: www.eau-sirma.net

