



Impact of topography and soil factors on crop suitability in two Mediterranean areas (Egypt and Spain)

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The aim of this research is to study the influence of topography and soil factors on crop suitability two Mediterranean areas: Sevilla (southern Spain) and El-Fayoum (northern Egypt). The Shuttle Radar Topography Mission (SRTM) images were processed using ENVI 4.7 software to extract elevation data, slope gradient and slope direction. North-south toposequences from both areas were extracted and studied using Arc-GIS 9.3 software. Soil characteristics along these toposequences were extracted from regional soil maps, as well as land surveying and laboratory analyses. The Almagra model (included in the agro-ecological system MicroLEIS DSS) was used to evaluate agricultural soil suitability using soil factors of useful depth, texture, drainage, carbonate content, salinity, sodium saturation, and degree of development of the profile. Changes of soil characteristics through the toposequences are discussed. The results of Almagra model indicate that the crop suitability main limiting factors are soil texture, drainage, soil salinity and sodium saturation percent and topography factors elevation, slope gradient, slope direction.