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"Challenges to Organic Farming and Sustainable Land Use in the Tropics and Subtropics"

Evaluation of Land Suitability for Agriculture in the El-Salam Region of the North Sinai

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Abstract

In order to improve the country's self-supply with food and to relief larger towns from the nutrition-related consequences of a continuous increase in population Egypt extends its agricultural land along the El-Salam canal in the North Sinai. To utilise the precious water resources most efficiently, land has to be selected for irrigation according to its suitability for agricultural production.

In this region, the El-Salam Canal project supplies about 168.000 hectares with mixed water from the Nile and agricultural drainage water to reclaim and cultivate these soils.

This environmental study comprises of a soil survey of the coastal zone soils along the El-Salam Canal to assess the development activities in this area and to evaluate the soils.

Remote sensing techniques based on Landsat TM data and ground truth campaigns identifying physical and chemical properties of the main soil types in the area. These data were then transferred into a land evaluation program and the resulting maps gave an excellent guide to where sustainable agriculture can be implemented.

The results of land evaluation for the observed soils in the northern part of the Sinai peninsula lead to the classification in four classes (III, IV, V and VI) according to soil texture, profile depth, slope, and risk of wind erosion. The soils in grade (IV) are restricted by texture, soil profile depth and relatively higher salinity, as well as their texture and high calcium carbonate contents. The soils in grades (V) and (VI) are affected by extreme salinity, texture soil profile depth, gypsum, high carbonate content and poor drainage.

Keywords: Egypt, land evaluation, remote sensing, Sinai, sustainable agriculture

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