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Use of multithematic layers for assessing the agricultural soil capability in some areas in Egypt.

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The main objective of soil capability assessment for agriculture is to predict future conditions after development has taken place. It is necessary to forecast the benefits to farmers and the national economy and whether these will be sustained. The current study deals with spatial analyses techniques to evaluate the agricultural land capability in some areas west of the Nile Delta. The land surveying data, Digital Elevation Model (DEM) and satellite image were used in a Geographic Information System (GIS) to delineate the landforms of the area. The attribute data of erodability, surface slope, CaCO₃ content, texture class, soil depth, salinity, alkalinity and drainage condition were linked with the landform units of the area. The thematic layers of the attribute data were created in Arc-GIS 9.2 software using the spatial analyses function, and then these layers were matched together to produce the soil capability map. The results indicate that the soils of very high, high, marginal, low and very low capability classes for agriculture represent 7.26, 22.45, 43.62, 21.11 and 5.56 % of the studied area respectively. The low capability classes in the area are mainly due to the shallow soil depth, coarse texture, poor drainage and the salts accumulation. Therefore, action measures of land management are essential for sustaining the agricultural land uses in this area.