

## SANDY SOILS

Report of the FAO/UNDP Seminar on  
Reclamation and Management of Sandy Soils  
in the Near East and North Africa, *1973*

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Special consideration has been given to studies and research on the utilization of sandy soils since large areas of the potentially irrigable lands belong to this category. The total area reclaimed of these soils is 300 000 ac, of which 50 000 ac in in Upper Egypt and 250 000 ac in the Delta. With the exception of small scattered areas in the Delta and Nile Valley most of the sandy soils are in the desert which makes up more than 95% of the total area of Egypt.

The sandy soils vary in their properties according to their origin and formation. Those soils dominant in the western desert are made up of quartz formed from weathering of the sandstone after exposure of this area to tectonic movements that resulted in the formation of the large depression in the western desert - the Qattara Depression.

The northern coast of this desert region is an exception because the sandy soils are of marine origin made of oolitic limestone with the calcium carbonate content up to 98%. The sandy soils predominant in the eastern desert and the north of Sinai are composed of quartz developed from sediments carried by Nile water over the ages; this has been confirmed by the similarity of the heavy mineral composition to that of Nile mud, the delta and the valley soils. On the contrary, sandy soils in the other parts of Sinai originated from geologic formation found in the El Tih plateau.

Although sandy soils differ in their origin, formation and properties, yet they can be considered as one group having common problems. Due to the differences previously mentioned, the studies in Egypt to solve the problems of sandy soils deal with inter-related factors and conditions which govern the possibilities of attaining the best economic utilization of these lands. Such studies include water relations, use of low quality water, physical, chemical and biological properties of these soils and their different environmental and agricultural systems beside the geologic and hydrogeologic studies.

The research planned to find solutions for sandy soil problems with the objective of increasing their economic utilization, includes studies of means to raise their water holding capacity and fertility, to improve structure by application of physical and chemical amendments and fertilizers.

With the aim of providing for macro and micro nutrient requirements surveys are carried out to find the limit of nutrients in different areas and furthermore, the fertilization techniques most suitable to each soil at appropriate times according to crop and agricultural practices.

It is worth mentioning that the reclamation of sandy soils in Egypt was dependent upon the annual addition of Nile mud besides that which was added from clearing irrigation canals and drains as well as the organic material. But the reduction in quantities of clay and silt after the construction of the High Aswan Dam has led research to be directed toward application of different methods such as asphalt emulsions, chemical amendments, whether by direct mixing or in barriers.

Regarding the management of these soils, consideration has been given to practical applications that limit the probable occurrence of rising water table, spread of salinity and erosion effects. In spite of this reclamation of sandy soils, Egypt is still faced with many problems that await correct solution. It seems that the attention paid to these soils does not agree with the normal economic measures used for evaluating other agricultural systems but due to the

increasing rate of growth of population and the pressure on horizontal expansion of land resources, the utilization of these soils is a "must". It is our hope that through study and research timely solutions can be provided for the problems of sandy soils.