

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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This report will not deal with morphology and classification of sandy soils since these have already been mentioned in the paper on Classification and Distribution of Sandy Soils in the Near East Region prepared by Dr. Kadry for this Seminar. It will deal with the following points.

1. Types of sandy soils.
2. Their problems and effect on agricultural development in Iraq.
3. Facilities available in Iraq for the development of these soils.

6.1. Types of Sandy Soils

The sandy soils of Iraq can be grouped into four categories according to texture, composition, presence on surface or subsurface and their physical and chemical characteristics; also method of utilization.

i. Sandy soils on river banks and water courses

In this type of sandy soil the percentage of fine fraction such as silt is dominant. The soils are frequently inundated either by floods from the river or high water table levels. Such soils are utilized for vegetable crops, legumes and rice production. Inorganic fertilizers are used to improve their productivity. In most cases these soils are not irrigated since they obtain their water requirements through capillary rise.

ii. Levee soils

These are of widespread occurrence in the alluvial plain in central and southern Iraq. Usually these soils are of light texture or contain a sandy layer which differs in thickness and depth. Some problems have appeared when executing land reclamation projects in this type of soil, especially in the construction of irrigation schemes and tile and open drains. There is a need for a comprehensive study of the effect of these layers on the basic principles of irrigation and drainage design up to the farm level.

iii. Sandy soils in the plains of central and southern Iraq

The area has a width of 5 to 25 km and extends from north-west to south-east, starting from Mussayeb project down to Zubair. In these areas the soils are characterized by an additional problem which is salinity and high water table level.

iv. Sandy soils in the northern and southern deserts of the Ghezira

Here the soils are characterized by the high gypsum content.

6.2 Problems and Effect on Agricultural Development

The most direct and indirect problems of sandy soils in agricultural development in Iraq could be summarized as follows:

- i. Management and development of sandy soils either in the fields of irrigation, fertilization or erosion control. This is particularly necessary close to highly populated rural areas, since this type of soil could be the only source for agricultural land.
- ii. Difficulties facing the construction of irrigation and drainage systems due to the presence of sandy layers which require special studies for design, execution and management of the systems.
- iii. The effect on agricultural and grazing lands of sandy dunes and their movement due to wind erosion.
- iv. The dual problem of salinization and poor management of sandy soils which has resulted in shifting agriculture as is the case in Zubair region where poor quality groundwater was used for vegetable crops.
- v. The difficulties of sandy gypsiferous soils and rainfed lands in the northern and southern deserts where a land settlement project for Bedouins is being carried out and small scale dams are being constructed for irrigation and drinking water.

6.3 Facilities available in Iraq for development of these soils

- i. The Institute of Natural Resources which belongs to the Organization of Scientific Research is carrying out some studies on the characteristics of these soils in addition to ecological studies and groundwater quality in these sandy areas.
- ii. Recently the State Organization for Soils and Land Reclamation was established with a special Division for studying the problems of desert and rainfed lands. An experimental station has been established to carry out studies on the management of these soils. It is hoped that the Organization will expand its efforts in this field, especially after the support given by the higher authorities of the country.
- iii. The General Department of Forestry which carries out studies on sand dune fixation in relation to wind and water erosion.

Conclusion

We would suggest the setting up of a special committee of those specialized in soil science, irrigation and management of sandy soils to look into the major problems of these soils, to set up guidelines and procedures for reclaiming and utilizing them, making use of existing studies and experts at the national and world level.