Monitoring Environmental Degradation of the Cultivated Land Surrounding Qarun lake, and How it Relates to Water and Salt Balance of the Lake.

Submitted By

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B.Sc., Agric. Sci. (Soils), Fac. of Agric., Ain Shams Univ., 1986

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Summary

Summery

This study was carried out at El Fayoum Governorate, Egypt. Twelve soil sections were selected from different cultivated land around the Qaroun Lake. To study the effect of water and salt in Qaroun lake in the cultivated land around the lake and how it's response in degradation in this land, by using some samples from this land and analyzing them in the laboratory (chemical and physical analysis)

Results can be summarized as follows:

The study area lies along the bar lake have been identified 12 sites to take samples for analysis of chemical and natural to investigate the natural and chemical properties of these lands for the purpose of monitoring and evaluating the environmental degradation of these lands.

Generally, in most cases, shows clearly that the studied soils of transect no. 1 which are represented by profiles 1.2 and 3 vary from clays to sandy clay in their texture class. Clay content varied from 42.5 to 67.5%, silt content roughly between 3.04% to 30.1%. It is also evident that the sediments of profiles (1, 2 and 3) exhibit an apparent homogeneity in respect to soil texture.

The goal of this research is to study the properties of Pedological lands adjacent to Qaroun Lake - Fayoum governorate and the impact of salt and

water balance of the lake on Pedological properties of the soil. In Fayoum depression, tile drainage system faces some unique problems which do not occur in the Nile delta. The sloping lands are dissected by irregular gullies. This makes regular layout of lateral and collector drains difficult. Soils in the north of El-Fayoum basin adjusting to Lake Qarun can be considered as problematic areas. They have shallow depths of brackish ground water which in consequence, the main reason to deteriorate soil properties. These deteriorated soils are an obstacle to trenching machines and reducing the internal drainage of the soils.

Also consequence of the intensified irrigation has been a rising water table and increased problems of water logging and salinization. The result was a deterioration of soil physical and chemical properties and a lower crop production, The technique of subsurface drainage (tile drainage) is must designed primary to control the water table depth at a level which will allow optimum root development for crops and prevent the capillary movement of harmful levels of salts into the root zone. A full understanding of hydrological, soil physical and chemical properties of these soils are considered as a fundamental base for a successful tile drainage designing program.

Which mean that two reason behind the Salt in the cultivated land, (Water Table and Salt from the Lake) and at the end the degradation in the cultivated land

To improve soil salinity, tolerant crops are cultivate for salinity to the removal of salts from the soil, as well as to bring an economic return for farmers like Wheat, maize, and Sunflower. When improve soil salinity tolerant crops are grown salinity contribute to the removal of salts from the soil, as well as bring an economic return for farmers. We can cultivate some crops such as Panicum turgidum, Spartina alterniflora (cord grass), Puccinellia phrygrandes (alkali grass), Tamarix, Batis mastuma, Nitrophila, Sesuvium partulacastrum and Lagumcularia racemosa l.

Also to conservator soil after reclamation we must adding quantities increase of irrigation water is called needs Washing relying on the measurement of the concentration of salts in the field, exchange or salt concentration of the extract of saturated soil for the spread of the desired roots internalization paste the mechanism of water (ECE) and thus can be calculated Washing needs

In the studied area, land improvements are required to correct the severity of limitations exiting in the area under consideration. Examples are as follows;

Leaching of salinity and reclamation of alkalinity.

Application of chemical and organic fertilizers, green manure and soil conditioners to increase soil fertility and improve the physical and chemical soil properties, and

Application of modern irrigation systems such as drip and sprinkler to save irrigation water and prevent the formation or the rise of ground water table.

Abstract

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