

# SOME OBSERVATIONS OF SAND DUNE FORMATIONS IN THE NEW VALLEY GOVERNORATE (EGYPT) AND EVALUATION OF CURRENT METHODS OF STABILIZATION

*Mahmoud A. Hassan*

## Abstract

In the open desert in the surroundings of El-kharga city, capital of the new valley governorate of Egypt, a phenomenon has been occurring over the years, that is the formation of sand dunes of various shapes. The movement of these dunes by the effect of the wind, especially in winter and spring seasons is obviously jeopardous to installations (roads, buildings, airport runways ...etc) in addition to damage of cultivated land (desertification) which is in real danger to national development plans. In dry zones such as the new valley desert, the scarcity of water makes it difficult to rely on traditional methods of vegetation for sand dunes fixation. Other traditional techniques such as use of mulching, stones, bricks, and bitumen spraying may be non-durable and non-economical, especially when dealing with vast deserts with large number of dunes.

This paper presents and evaluates a field-based study of the situation of sand formations and dunes in the area encompassing El-kharga city. The main objective is to examine technical durability and economic effectiveness of methods presently used to fight this phenomenon and to suggest alternative less costly, yet durable and effective techniques. These alternative techniques are still to be subjected to in-door evaluation prior to field application.