

The Use of Landsat Thematic Mapper Data for Mapping the Marginal Playa Soils in Damghan Playa ,IRAN

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Key words:

ABSTRACT

Having notice that playa and arid lands have a harsh condition, studying and field observation in these areas face some limitation and difficulties and even in some cases is not possible. Therefore in order to overcome some of these problems, remote sensing and landsat satellite data can be very useful to study such areas, especially because of absence (or near-absence) of vegetation cover, usually clear sky, a shortage of rainfall and thus low soil moisture contents. (Escadufal and Puget 1986, Mulders and Epema 1986, Abd El-Hady et al. 1991). Soil is one of the most important parts of this environment, which always has been considered for researchers. Many researches were interested to study relationship between soil surface characteristics and soil spectral behaviors. Gossense et al. (1991) in Ismailia province of Egypt using TM1, TM3, TM5, TM6 bands, that were obtained from OIF calculation, detected gypsiferous soils. They have used another bands combination including TM6, TM7, TM5, TM3 in order to separate gypsiferous soils from other soils. Metternicht and et al. (1997) using an integrated approach of digital image classification including field observation and laboratory analysis discriminated salt and sodium affected soil surfaces. Alavipanah et al. (1997) have studied soil salinity in Ardakan area, Iran, based on the field observations and remotely sensed data. They concluded that behavior of the TM thermal and reflective TM bands is highly depended on the type of land cover.

The study area located in north Eastern of Iran Semnan Province and southwestern of Damghan Town with 35° 36' 14" to 36° 5' 9" latitudes and 54° 5' 44" to 54° 58' 16" longitude (Figure 1) which covers 46600 ha.

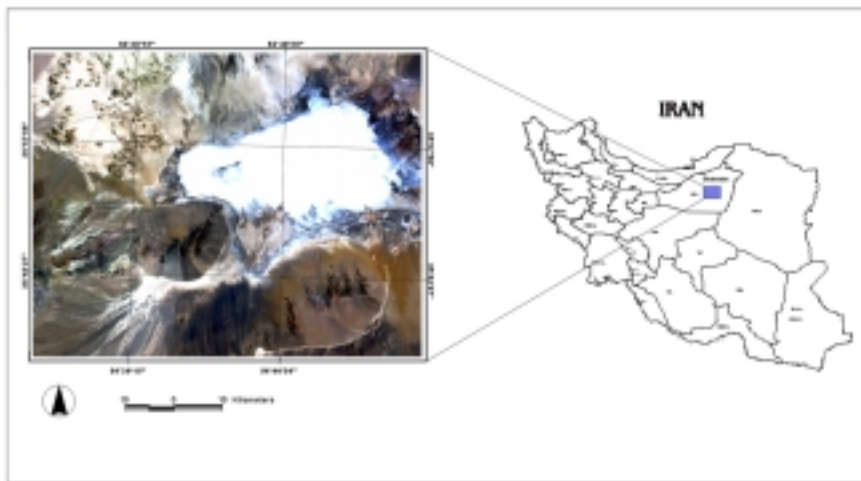


Figure 1. The location of studying area.

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