

Analysis of erosive winds distribution in the Khuzestan Province

Zeinab HAZBAVI, Mahin KALEHHOUEI and Bijan KHALILI MOGHADAM

¹ Water Management Research Center, University of Mohaghegh Ardabili, IRAN

² Tarbiat Modares University, IRAN

³ Agricultural Sciences and Natural Resources University of Khuzestan, IRAN



GEA (Geo Eco-Eco Agro)
University of Montenegro
28 May 2020, Podgorica, Montenegro



Introduction

Soil erodibility is an important information layer used by local planners in the prioritization of soil and water conservation measures. Due to the escalation of this challenge in recent years, it is necessary to achieve scientific solutions to control this phenomenon. In general, the main purpose of wind erosion studies is to investigate the erosive wind erosion of the region and the intensity and direction of dust producing formations, soil erodibility at the center of dust production and zone sensitivity to dust production. There are direct and indirect methods to determine the degree of soil erosion. Direct methods of measuring wind erosion takes place directly inside the field. Indirect methods are more based on empirical modeling and process. Therefore, the aim of this study was to investigate and analyze the wind characteristics and erosive winds of Khuzestan Province.

Result

The results of this study showed that the most significant erosive wind occurs in the south to southeast regions (135 to 138 degrees). The results proved the presence of two dominant winds of northwest and west onwards to Khuzestan Province. Most of the erosive winds are blowing on the western edge of Khuzestan Province from neighbor country and from Ilam.

Wind energy zoning in the Khuzestan Province and the western edge of Iraq and Ilam Province show that most of the wind energy is concentrated on the western margin of the province and on the Iran-Iraq boundary and then the southern regions of the province have moderate energy. While the regions of the north to northeast and east of the province have low energy. This means that the dust and sand stabilization projects should focus on the western and southern areas of the province.

Materials and Method

The basic information required for this research was collected from a report provided by the Ministry of Agriculture Jihad. In order to calculate the annual and monthly wind energy levels, hourly statistics analysis of wind speed and direction and erosive winds during the statistical period of 2009-2013 collected from country's meteorological organization were used. The wind erosion threshold was tested on the basis of 21 soil samples within a constant wind tunnel of the Iran- Research Institute of Forests and Rangelands. Figure 1 shows the position of Khuzestan Province in Iran.

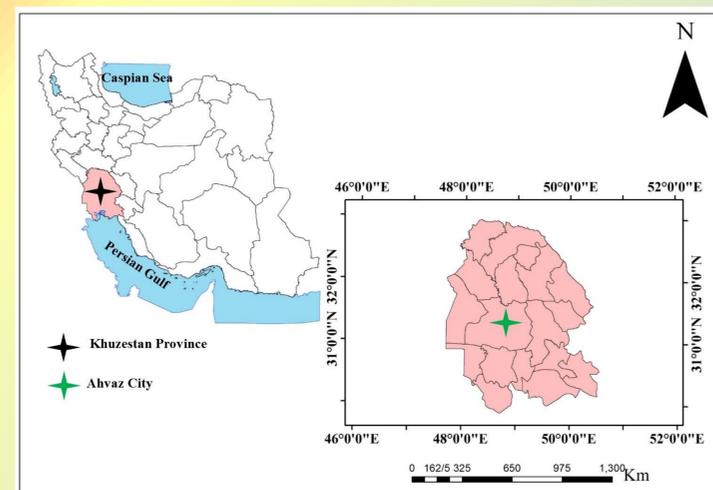


Figure 1: The position of Khuzestan Province in Iran

References

- Hazbavi, Z., Sadeghi, S.H.R., Gholamalifard, M. & Davudirad, A.A. (2020): Watershed health assessment using the pressure-state-response (PSR) framework. *Land Degradation and Development*, 31: 3-19.
- Khalili Moghadam, B., Jamily, T., Nadian, H., Shahbazi, E. (2015): The influence of sugarcane mulch on sand dune stabilization in Khuzestan, the southwest of Iran. *Iran Agric. Res.* 34(2), 71-80.
- Moradi, F. Khalili Moghadam, B., Jafari, S., Ghorbani Dashtaki, S. (2014): Long-term effects of mechanized cultivation on some soil physical properties in some Khozestan sugarcane agro-industries. *Journal of Water and Soil*, 27(6), 1153-1165.
- Institute Research of Forests and Rangelands (2017): Report of Southeastern Ahwaz Dusty Hotspot, Phase I: Executive study plan for dealing with dust phenomenon in internal hotspots of Khuzestan. 372 p.



GEA (Geo Eco-Eco Agro)
University of Montenegro
28 May 2020, Podgorica, Montenegro