

## Assessing the causes of drought in Hamoon International Wetland using rainfall, dust and drought indices

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### Abstract

One of the main environmental problems in the Sistan region is dust storms. Also, climate change and global warming among the most important environmental issues in recent decades, affecting most of the ecological area are involved. Considering the increase in dust storms and drying up of Hamoon Wetland, it is very important to study the relationship between the dust index and precipitation indices in the region. A prerequisite for a management decision regarding the control of dust phenomena will be to know the relationship amount of drought index and dust. The trend of precipitation changes and drought index was evaluated seasonally and annually for a period of 32 years (1983-2015). DSI (Dust storm index) index was used to investigate dust storms. The results showed that the amount of rainfall in spring, autumn, and winter, as well as annual rainfall, has decreasing trend but not significant. The drought intensity was different for each season and the annual drought intensity was estimated as 33.3%. The annual dust index for the study period was 71 days. The correlation coefficient between DSI (Dust storm index) and PAI (Precipitation Anomaly Index) (0.077) showed that there was no significant relationship between these two indices. The results showed that the changes in dust and dryness of Hamoon Wetland are not due to reduced rainfall and the drying up of Hamoon Wetland is more due to dams upstream of the basin and cutting off the water entering the wetland not the amount of rainfall.

**Keywords:** Hamoon Wetland, Climate change, Dust storm index (DSI), Precipitation Anomaly Index (PAI).