

The effect of 120-day winds on the safety of Sistan region

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Extended Abstract

1- Introduction

Sistan and Balouchestan climate is located in the dry and wild land (Khosravi, 2004:163-187). This climate moves the moist particles in the atmosphere because it is dry, since no other humid weather is being replaced, the relative humidity increases and causes the weather to be dried. In such circumstances increase in vaporization of the weather which cause the soil to have more moisture and prone to wind erosion. Wind erosion destroys the nutritive particles of the soil which are less than 2μ such as humus, clay and the soil salts. The wind erosion may move these particles

to the remote areas in form of dust storms) Ranjbar et al. 2005:79. The recent studies show that 14 provinces of the country are affected by erosion winds; Sistan and Balouchestan province which is 229174 Hectare becomes the first in this category (Iran Manesh, 2007:26). In Sistan, desert is located in this region besides the important and populated cities such as Zabul, Zehak, Dust Mohammad, Hirmand and Adimi (census of Sistan and Balouchestan province 2006:42). This region is 15195 km² and its cultivate lands are 140 Hectare which Hirmand river passes among them, they included 67.2% of farms (Akbari Moghaddam and Ee'tesam, 1991:18). The morphologic and climatic features show the dominance of wild lands over this region One of the important factors that influence the creation of dust in the region, is the drought phenomenon. It has affected the regional development. Drought is one

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of the main factors of erosion. Inevitably the main factor of erosion in this region is dust and sand storms due to the 120 day winds of Sistan. Wind erosion reduces soil fertility, on the other hand destroys and bury the farm lands, buildings, industrial and infrastructure institutions out of lands (Negareh: 2009:83-73), Which ultimately will have a significant impact on regional security in Sistan.

2- Methodology

The basic of this assessment have been chosen according to the nature of subject, which are descriptive-analysis method and the library method for making notes out of data and sources of information. Since the field observations and maps are the most important tools of research in geography, we referred to the topographic maps of 1:50000 and 1:250000. It is tried to identify effective geographical ranges in order to get useful outcomes. So the current study is going to assess the complications of 120 day winds and dust caused by them through gathering maps and field observations. Then it suggests some approaches to reduce the effects and finally the safety load by them.

3- Discussion

Wind is an important factor for the exchange of heat, moisture and transmission of microscopic and nonmicroscopic elements from one place to another. These exchanges has important role climatically in human welfare or its disorders, either thermal

or comfort in behavior. It is important to consider the direction and rate of the wind in this region compared to others which have deeper negative and positive welfare effects (Razjoyan, 1998:3). Different regional pressure in Sistan and Baluchestan causes local winds including north wind, west and east winds (EbadiNejad, 2010:474). The 120day winds of Sistan are famous in local winds of Iran between 4th of June and 5th of September. The rate is estimated by 110 to 170 km/h with the temperature of 75^oc) Khosravi, 1989:170. This region has suffered many damages. Dr Alijani in his book of Iran's climate mentioned that wind blows from north eastern altitudes to the southern lands. He said these winds are very graceful and chilly in Alborz southern skirt, however when they passes over the dry lands of Kavir and Lout desert they become very warm and dry, so that they can ruin the vegetation and cause many irrevocable damages.

The most important factors which have roles in the transfer of sandstorms are: wind, particle features, moist, vegetation, earth ruffling and soil salts. The sediments of the region are fine including 60% clay, 30% silt and 10% sand, so the fine-spun particles are based on the alluvial soil of the Sistan desert which causes the particles to move by a mild wind. Certainly many factors move the current sand in Sistan, one of which is the wind rate in dry seasons of the year. The 120day winds are so fast that make some massy dust in the sky and prevent any activity by people so that they make many

disorders in public situation (Nourzehi, 1993:13). These winds carry the small particles of the soil and make 2-3 and 6-9 meter deep poles. The morphologic effects of the region are sandy deserts, mark ripples, sif and Barkhan which are made bywind erosions (Salighe, 2003:110). Lack of vegetation and the existence of soft and disjoint structuresin deserts which are caused by dry climate, provide a situation for wind geometric processes and cause multiple geometric phenomena and forms.

4- Conclusion

The conclusion of this study shows that one of the factors which prevents the development of the region is dust and sand storms caused by 120day winds. The dusts are mainly created by 120day winds in the region studied. Dust and sand storms is a natural phenomenon that causes many damages to economic and social infrastructure institutions. Damages of the farms, gardens, water channels, connetion roads, airlines and village abandonment and migration of people from the region are affected by 120day winds. So they can affect the region safety directly and indirectly. In order to oppose this environmental factor, we should encounter this natural disaster by using the environment itself and implementing natural factors. So that some obstacles are made in the

way of wind in order to reduce its strength under erosion threshold.

Key words: 120-day winds, sand storms, safety.

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